



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

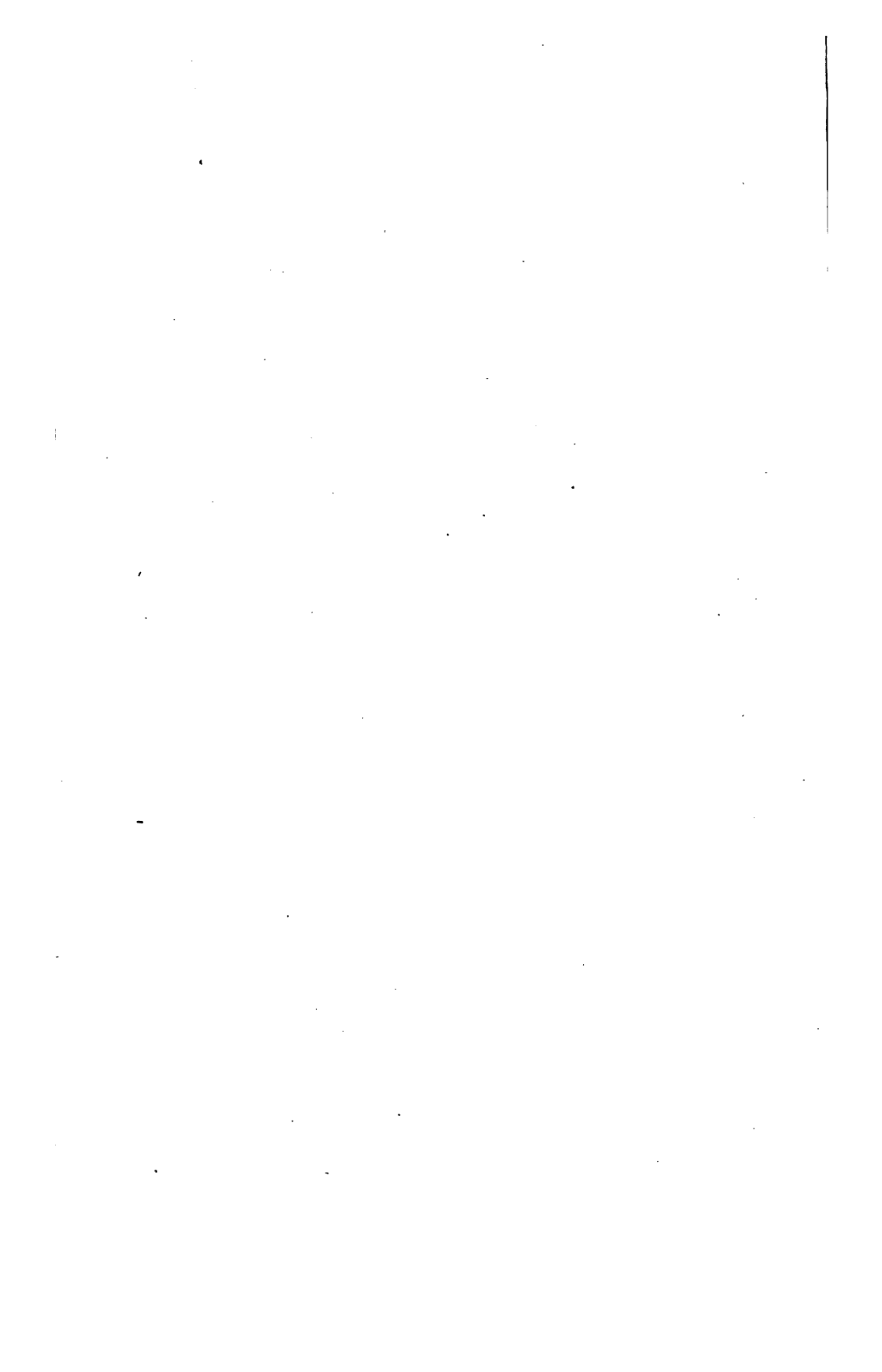


Class HE 393

Book A13

1921











# River and Harbor Appropriation Bill, 1922

---

## HEARING

BEFORE

*U. S. Congress*

## SUBCOMMITTEE OF HOUSE COMMITTEE ON APPROPRIATIONS

*231*  
*216*  
*Part 4*

CONSISTING OF

MESSRS. S. WALLACE DEMPSEY (CHAIRMAN), CHARLES R. DAVIS,  
JOHN JACOB ROGERS, JOHN H. SMALL,  
AND JOHN M. EVANS

IN CHARGE OF THE

## RIVER AND HARBOR APPROPRIATION BILL FOR 1922

---

SIXTY-SIXTH CONGRESS

THIRD SESSION



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1921

HE 393  
A 13  
1921

COMMITTEE ON APPROPRIATIONS.

HOUSE OF REPRESENTATIVES.

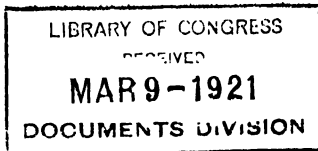
SIXTY-SIXTH CONGRESS, THIRD SESSION.

JAMES W. GOOD, Iowa, *Chairman*.

CHARLES R. DAVIS, Minnesota.  
MARTIN B. MADDEN, Illinois.  
DANIEL R. ANTHONY, Jr., Kansas.  
WILLIAM S. VARE, Pennsylvania.  
JOSEPH G. CANNON, Illinois.  
C. BASCOM SLEMP, Virginia.  
SYDNEY ANDERSON, Minnesota.  
WILLIAM R. WOOD, Indiana.  
LOUIS C. CRAMTON, Michigan.  
PATRICK H. KELLEY, Michigan.  
JOHN JACOB ROGERS, Massachusetts.  
EDWARD H. WASON, New Hampshire.  
WALTER W. MAGEE, New York.  
GEORGE HOLDEN TINKHAM, Massachusetts.  
BURTON L. FRENCH, Idaho.  
JOHN A. ELSTON, California.  
S. WALLACE DEMPSEY, New York.  
MILTON W. SHREVE, Pennsylvania.  
CHARLES F. OGDEN, Kentucky.

JOSEPH W. BYRNS, Tennessee.  
THOMAS UPTON SISSON, Mississippi.  
JAMES MCANDREWS, Illinois.  
JOHN M. EVANS, Montana.  
JOHN J. EAGAN, New Jersey.  
JAMES P. BUCHANAN, Texas.  
JAMES A. GALLIVAN, Massachusetts.  
JAMES F. BYRNES, South Carolina.  
JOHN H. SMALL, North Carolina.  
S. HUBERT DENT, Jr., Alabama.  
THOMAS L. RUBEY, Missouri.  
EDWARD E. HOLLAND, Virginia.  
WILLIAM W. HASTINGS, Oklahoma.  
WILLIAM A. AYRES, Kansas.  
THOMAS F. SMITH, New York.

MARCELLUS C. SHEILD, *Clerk*.



7048 MAR 23, 1921

## RIVER AND HARBOR APPROPRIATION BILL, 1922.

HEARINGS BY THE SUBCOMMITTEE, MESSRS. S. WALLACE DEMPSEY (CHAIRMAN), CHARLES R. DAVIS, JOHN JACOB ROGERS, JOHN H. SMALL, AND JOHN M. EVANS, OF THE COMMITTEE ON APPROPRIATIONS, HOUSE OF REPRESENTATIVES, IN CHARGE OF THE RIVER AND HARBOR APPROPRIATION BILL FOR 1922, ON THE DAYS FOLLOWING, NAMELY.

FRIDAY, JANUARY 7, 1921.

### STATEMENT OF BRIG. GEN. HARRY TAYLOR, ASSISTANT CHIEF OF ENGINEERS.

#### PORTLAND HARBOR, ME.

Mr. DEMPSEY. The first item, Gen. Taylor, is Portland Harbor, Me., page 91 of the report of the Chief of Engineers.

Gen. TAYLOR. Yes, sir. On page 93, in the paragraph "Proposed operations," will be found the statement of what it is proposed to do with the money for which an estimate is submitted.

Mr. DEMPSEY. I see that the excavation is in the main channel.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. How much of a channel have you that is clear of these rocks?

Gen. TAYLOR. There is a very good, wide channel each side of the rocks, but they are in very nearly the center of the entrance channel of the main harbor, in a position where they are likely to cause a wreck at any time.

Mr. DEMPSEY. Do you know what the width is on each side? Have you anything to show that?

Gen. TAYLOR. If I may refer to the project document.

Mr. DEMPSEY. I see about 94 per cent of the entire project authorized has been completed according to the report, Gen. Taylor. page 92.

Gen. TAYLOR. Yes, sir. There is nearly 1,000 feet on one side of the rocks and about 600 feet on the other.

#### BUFFALO HARBOR, N. Y.

Mr. DEMPSEY. Now, to illustrate the necessity, this harbor has a commerce of about two and one-half million tons, while Buffalo Harbor, for instance, has a commerce of 16,000,000 tons, has it not?

Gen. TAYLOR. Something like that; yes, sir.

Mr. DEMPSEY. And Buffalo Harbor has an entrance of only 200 feet, has it not?

Gen. TAYLOR. Yes; but the conditions are quite different. It would be more as if this rock were 5 miles out in the lake in the direct path of the vessels heading for Buffalo Harbor. It would then be a very serious menace in times of fog and storm. These rocks ordinarily are not a serious difficulty at all. It is only in case of fog, of which there is a great deal prevailing on the Maine coast during the summer months particularly, practically a continuous fog.

Mr. DEMPSEY. Have they not lights?

Gen. TAYLOR. The rocks are undoubtedly buoyed.

Mr. DEMPSEY. And the buoy would give a light?

Gen. TAYLOR. The buoy would probably be lighted; yes, sir.

Mr. DEMPSEY. So it is simply a question of whether a light could be seen under fog conditions?

Gen. TAYLOR. It is a question of removing an obstruction which may cause a wreck.

Mr. DAVIS. Regardless of the light?

Gen. TAYLOR. Yes, sir.

Mr. DAVIS. A storm might drive a vessel on it?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Has there ever been a wreck caused by these rocks?

Gen. TAYLOR. The report does not state, Mr. Chairman, whether there have actually been any wrecks or not on the rocks.

Mr. DEMPSEY. You have no record?

Gen. TAYLOR. I have no record; not here.

Mr. DEMPSEY. Just to refer to our illustration of Buffalo again, as a matter of fact in coming into that very narrow entrance at Buffalo, you have to make a sharp turn, do you not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You are at the foot of the lake, coming into a river, and in making the turn, which may have to be made during a fog or during a storm you have 200 feet as against 600 or 1,000 feet?

Gen. TAYLOR. Yes, sir. Undoubtedly the entrance to Buffalo Harbor in times of storm is not easy.

Mr. DEMPSEY. No; it is very difficult.

#### NEWBURYPORT HARBOR, MASS.

Mr. DEMPSEY. The next item is Newburyport Harbor, Mass., page 101. That is entirely for maintenance. That harbor has a tonnage of 42,000 tons, of the value of approximately one-half million dollars, and the commerce seems to be growing considerably, does it not?

Gen. TAYLOR. The commerce previous to 1917 was larger than it has been in the last two or three years; in 1917 it was 43,000 tons, and in 1918 it was 23,000 tons, and in 1919 it was 42,000 tons.

Mr. DEMPSEY. It seemed to reach a low ebb in 1918?

Gen. TAYLOR. Yes, sir; it is principally coal, which is taken up there and distributed through southern New England.

Mr. DEMPSEY. That \$2,000, then, I suppose is necessary?

Gen. TAYLOR. Yes, sir; I think it is.

#### BOSTON HARBOR, MASS.

Mr. DEMPSEY. Your next item is Boston Harbor, Mass., page 109. That is one of the great harbors of the country?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And with a commerce of nearly 6,000,000 tons, with a value of \$120,000,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And your estimate, I take it, is for just the necessary maintenance of the port?

Gen. TAYLOR. That is all.

Mr. DEMPSEY. That includes, I suppose, clearing out any accumulations?

Gen. TAYLOR. And possibly dredging of the channel.

Mr. DEMPSEY. But in a great harbor like that there are always things occurring which require operations in the nature of maintenance?

Gen. TAYLOR. Yes, sir; we are obliged to maintain inspection and survey boats there all the time in order to keep track of the conditions in the harbor. A considerable portion of the channel is excavated in rock, and a very slight shoaling on that rock area—the turning up of a rock, for instance, by an anchor, or something of that kind—is likely to cause serious damage to a ship. It is altogether a different condition than in a harbor in which the bottom is soft mud.

Mr. DEMPSEY. Will the building of that new bridge over the Hudson, if it is built, increase the traffic to New England and to Boston?

Gen. TAYLOR. That bridge a short distance below Albany?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. I think it would have no material effect on the conditions—on the amount of traffic. It makes it much easier. It avoids the hill going out of Albany and the congestion through the Albany yards.

Mr. DEMPSEY. In other words, it will simplify transportation, but probably not increase the amount that will go east from Albany?

Gen. TAYLOR. Exactly.

Mr. DEMPSEY. What is the position of the War Department on that bridge?

Gen. TAYLOR. That it is unobjectionable.

Mr. DEMPSEY. What is their position as to its necessity?

Gen. TAYLOR. That it is a matter for the railroads to determine.

Mr. DEMPSEY. I mean from the engineering standpoint, what do you gentlemen think?

Gen. TAYLOR. It seems to me it is a very great benefit.

Mr. DEMPSEY. Relieving congestion?

Gen. TAYLOR. Yes, sir; it relieves congestion; incidentally, it is a benefit to navigation, because as it is now all those freight trains that cross the bridges at Albany cause the bridges to be kept closed where otherwise they might be opened, and they do a good deal of switching there. The traffic across those bridges at Albany would be transferred to this high bridge lower down the river and avoid that much congestion in the Albany yards and on those bridges. It would be, I think, actually a benefit to navigation.

Mr. DEMPSEY. Because this bridge is high and better for navigation?

Gen. TAYLOR. That bridge is sufficiently high so boats may go under it without the draw being open. The span is wider than the channel of the river.

## POLLOCK RIP SHOALS, NANTUCKET SOUND, MASS.

Mr. DEMPSEY. The next item is \$300,000 for Pollock Rip Shoals, Nantucket Sound, Mass., page 149 of the report. Is there any record, Gen. Taylor, of the amount of traffic that passes through that channel?

Gen. TAYLOR. We have tried to get a record, but it is very difficult to do it, because so much commerce goes through there at night when we can not count it; but the best estimate we have been able to make is something over 20,000,000 tons a year that goes through there. It is principally coastwise traffic between New England and New York.

Mr. DEMPSEY. What is the nature, just in a very general way, of the work that you propose to do in making this further improvement?

Gen. TAYLOR. It is a straightening of the channel so as to make the channel through the shoals less difficult.

Mr. DEMPSEY. What is Pollock Rip Channel; what is it between, between what points?

Gen. TAYLOR. It is south of Monomoy Point, which is just south of Cape Cod. Boats come up through the sound and follow through here, through Vineyard Sound, then get in here to Nantucket Sound; in order to get out of Nantucket Sound that is about the course they have to sail. It is a Z, with quite sharp angles in it, and what we are doing is cutting off this point right there [indicating on map], so as to make it more nearly a straight line through there. In order to get through they have to zigzag, and a very sharp zigzag.

Mr. DEMPSEY. What you propose to do is to excavate a reasonably straight channel?

Gen. TAYLOR. Yes, sir. We have a report somewhere which gives the number of wrecks which have occurred on the Massachusetts and Rhode Island coasts, a spot marking the location of each wreck, and down around in this particular section it looks as though the flies had been very thick. It is simply a mass of little black spots, showing a very great number of wrecks there.

Mr. DEMPSEY. In other words, you think the making of this improvement would, in a considerable measure, obviate the danger to navigation there?

Gen. TAYLOR. Yes, sir; it renders it less dangerous.

Mr. DEMPSEY. I take it, too, it would expedite navigation as well, the course being made straight instead of zigzag, the navigator would be able to proceed more rapidly as well as more certainly?

Gen. TAYLOR. Yes; it would have a little effect in that line, but the principal effect would be in rendering it much safer in going through.

## CAPE COD CANAL.

Mr. DEMPSEY. This is not a case where the new canal there takes the place of—

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. That is at a different point?

Gen. TAYLOR. That is at a different point. Of course, the same commerce is affected to a certain extent, and whatever commerce goes through the canal, that much is taken away from this channel.



Mr. DEMPSEY. Colonel, if you will just look here a moment [referring to map], I see that this course is really what you might call an outside course, and the canal is an inside course for covering the same thing?

Gen. TAYLOR. Yes, sir; whatever business goes through the canal is business which, as a rule, would otherwise go through this Pollock Rip Channel, so that the business that goes through the canal is subtracted from the business that would otherwise go through Pollock Rip Channel.

Mr. DEMPSEY. You are dredging there to the end of what is known as—

Gen. TAYLOR. South of Monomoy Point.

Mr. DEMPSEY. Here is the question that enters my mind: Should the Government improve both of these routes—the canal route and the route through Nantucket Sound—or should not one, and that the inner one, which is very much the shorter, be improved, with the idea of centering the commerce that way?

Mr. SMALL. That is the canal route?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. In the first place, the Government has not yet taken over the Cape Cod Canal. A toll is charged for vessels going through it. The currents are swift and the channel is narrow; it is not sufficiently deep; it requires a tug to take a boat through, so that the expense which the vessel is put to, going through it, is such that there is comparatively little business through it at the present time. If the United States should finally take it over, enlarge it, and improve it, and take away the tolls, and fix it so there could be a real, easily navigated channel, there would be a grave question as to whether this Pollock Rip Shoal project should be kept up or not. Up to that time the Pollock Rip Channel is and will be used by a very large commerce.

Mr. DEMPSEY. I supposed that the contract had actually been entered into between the Government and the owners of that canal, that it had either been concluded or was in process of being concluded.

Gen. TAYLOR. Congress authorized the taking over of that canal on satisfactory terms. The Secretary of War offered the canal owners, I think, \$8,000,000, in round numbers, for the canal and everything that went with it. The owners declined to accept his offer; the matter went to condemnation suit, and the owners were given an award of some \$16,000,000, which the Secretary of War declined to accept. That is being appealed at the present time. Our records indicate that, taking all costs, everything, into consideration, the canal had cost something like \$13,000,000, but the actual construction costs we figured were under \$10,000,000, and \$8,000,000 was a very fair price, and would reimburse the company for legitimate expenditures. What the award of \$16,000,000 was based on I do not know, except I think it was based upon the estimate of what it would cost to reproduce the canal at the present time, and what it was worth on various very optimistic suppositions as to the commerce that might go through the canal. As a matter of fact, the canal has never paid operating expenses.

Mr. DEMPSEY. Is not that just the basis on which they made the award, that there was a long period of construction during which

there were no returns—I know nothing about this, but I am speaking now just as a lawyer—during which there was no return, and that since the canal has been substantially completed it has paid no returns upon the capital invested, but simply operating or not quite operating expenses, and the owners have invested not alone their capital expenditure but income from the time that they started the work?

Gen. TAYLOR. I do not know. That might be the theory. The canal was taken over, if you remember, during the war by the Railroad Administration and operated by them during the war at a loss—at quite a heavy loss—it ran up into hundreds of thousands of dollars that it cost the Railroad Administration to operate the canal over and above the receipts they obtained from it, and during that time there was a much greater use of the canal than there has been before or since.

Mr. DAVIS. What did they base this valuation of \$16,000,000 on?

Gen. TAYLOR. I do not know.

Mr. DAVIS. Probably good will or something like that.

Mr. SMALL. Nobody has ever discovered upon what basis a jury makes its findings.

Mr. DEMPSEY. I was just suggesting. Gen. Taylor has just suggested the capital expenditure was probably \$8,000,000.

Gen. TAYLOR. It is more than that. They have actually spent more than that.

Mr. DEMPSEY. Probably \$10,000,000. It has taken a long period of years, and do you not see your interest load would probably add to the amount?

Mr. DAVIS. Therefore, they want to get even, at least.

Mr. DEMPSEY. Yes; but General, the fact that the Railroad Administration lost a lot of money would not be persuasive to me at all, because if you look at the statistics you will find they earned 15 per cent of the standard return of all the New England roads; 15 per cent of what the roads earned previous to the time they took them over. If they can do as badly as that with a railroad, where they have a force that has been operating the railroad since it was built, how badly they can do with a canal, which they take and run as a new undertaking, would be difficult to estimate.

Gen. TAYLOR. Here is a map that will give you some idea of the wrecks. There are the locations of the wrecks [indicating]. Every one of those numbers indicates a wreck.

Mr. DEMPSEY. I see. That is tremendous.

Mr. DAVIS. Are they obliged to go that route?

Mr. DEMPSEY. They are obliged to go the one way or the other.

Mr. DAVIS. Why can they not go up through the canal? Are they obliged to go through this way?

Gen. TAYLOR. There are the tolls and difficulties of navigation and lack of depth through the canal. The other route outside of Martha's Vineyard and Nantucket makes a longer and more dangerous trip.

Mr. DEMPSEY. They can add to the dangers and lengthen their voyage if they want to?

Gen. TAYLOR. Yes; or go through the canal and add to their expense.

Mr. DEMPSEY. Mr. Small, this is the proposition: Here is an item of \$300,000, which would be a considerable part of this bill. As I understand the sentiment of the country it is that this canal should be utilized on account of the dangers of navigation which are inseparable from the outside route, no matter how safe they make the course, and on account of the fact that the canal is very much shorter. Do you not understand that is the marine sentiment?

Mr. SMALL. There is a practical question of the purchase of the canal; and the engineers having estimated its value to the United States as about \$8,000,000, and the jury having awarded \$16,000,000 in the condemnation proceedings, it creates a difficulty there which must be overcome before the committee and Congress will be justified in taking it over; and in the meantime the question arises whether we should continue this appropriation on Pollock Rip Shoals.

Mr. DEMPSEY. Does it not look to you that in the end it is almost certain that the Government will acquire this canal? Is it not a fact that the law has provided what is supposed to be the best means of reaching a valuation and, in the absence of any other method, and with our experience in our entire history of that being the method adopted, why it is easy to say that the machinery has not worked quite as well in this given instance as it should, yet the Government, which institutes the machinery, should be rather slow to complain of its working? Is that not true?

Mr. SMALL. Yes; that is a good theory, but it does not always actuate Congress.

Mr. DEMPSEY. I am not saying that any particular price should be paid here. But I do say it does seem to me that in the end the Government, in some way, is going to acquire that canal, and more reasonably. I do not want the Government to acquire it on any terms except reasonable terms, and I think it ought to be acquired as soon as it can be acquired.

Mr. DAVIS. Your idea is that although we provide to do this work and provide a perfectly good route over this route—

Mr. DEMPSEY. Through Nantucket Sound.

Mr. DAVIS. Through Nantucket Sound—yet ultimately you think the canal is going to be absorbed by the Government of the United States?

Mr. DEMPSEY. I think not only ultimately, but I think within a short time.

Mr. DAVIS. Then ultimately this work we are now doing would be practically thrown away?

Mr. DEMPSEY. Yes; that is my judgment of it, exactly.

Gen. TAYLOR. I should like to say to the chairman, even if you have the canal there, I believe you are going to have an enormous business through this channel. I do not believe all of your business, by any means, is ever going through the canal, even if you had a good, wide canal.

Mr. DAVIS. I see you have estimated here 20,000,000 tons. That is on the theory the tonnage all goes this way?

Gen. TAYLOR. That is the estimate—as nearly as we can estimate—what actually does use it. We have tried to have the keepers of the light vessel keep track of the business going through. They can do

that during the daytime and in pleasant weather, but in the night-time and in fogs and storms they can not keep track of the vessels.

Mr. SMALL. General, you may also add, which I understand to be a fact, there is a very large fleet of sailing vessels engaged in coastwise commerce along the New England coast, and they, those hardy navigators along the coast there, in order to avoid both tolls and expense of towing through the canal, prefer to go through the Pollock Rip Shoals?

Mr. DAVIS. And take a chance?

Mr. SMALL. And take a chance.

Gen. TAYLOR. There will always be through the canal strong currents on account of the difference of elevation of tide in Buzzard's Bay and in Cape Cod Bay, and there is a great question as to whether eventually we shall not have to put a tide lock in the canal when taken over. That is objected to by navigators on account of the delay going through, but it is a question whether we can widen and deepen the canal and maintain it of sufficient dimensions to render navigation easy.

Mr. DAVIS. General, on the theory that we, upon the part of the Government here, are going to very materially increase our merchant marine in all ways, do you not think every available channel through which a vessel could pass ought to be improved?

Gen. TAYLOR. No, sir; I do not think that; but I think the business is so large and so much of it will go through this channel that we ought to do what we can to make it available.

Mr. DAVIS. Do you not think the business will ultimately improve as our merchant marine increases in size?

Gen. TAYLOR. Yes, sir; I do. You were asking whether that was an estimate of what we thought would go through. In the report it is stated during the calendar year 1919 the following vessels are reported as having passed Pollock Rip Shoals light vessel: Steamers, 2,840; sailing vessels, 1,017; barges, 2,102. Those are the ones the keepers actually saw passing. Those that passed at night and in fogs and storms they have no record of.

Mr. DEMPSEY. How much shorter is the passage through the canal than the passage through the Sound?

Mr. DAVIS. From what point?

Mr. DEMPSEY. From any New England point, such as Boston, to New York; how much does it save in distance, taking the canal instead of the Sound?

Mr. SMALL. It would be at least 80 miles shorter.

Mr. DEMPSEY. What is the sailing distance from Boston to New York, via the Sound?

Gen. TAYLOR. It is about 270 miles.

Mr. DEMPSEY. In other words, the passage of the canal would save nearly one-third of the distance, approximately, and patently one-third of the distance. Now, is there any business in the world that can afford to travel one-third more in these times, with the size of boats and cost of transportation?

Mr. SMALL. I believe the canal should be purchased. The facts are very conclusive on that point, but just now the question of the price is the obstacle, and I am rather of the opinion that until that is adjusted—

Mr. DEMPSEY. I think we ought not to do anything about that. I am not inquiring with reference to hurrying that purchase or influencing that price; it is none of our business, and I do not want to interfere with it. My inquiries are directed solely to one thing. We are going to try to make a bill that will be adequate, and yet a bill that will be economical, and I have grave doubt as to the wisdom of this item in view of that fact.

Mr. DAVIS. How would it do to cut the amount in two?

Mr. DEMPSEY. I do not know whether you want to do anything. I do not know whether you want to throw away half a dozen oranges instead of a dozen.

Mr. DAVIS. Is there any special overhead charge now connected with it?

Gen. TAYLOR. No; because we take the dredge off and use it somewhere else. For instance, during the war we did not dare work down there on account of submarines, and the dredge was sent down to Norfolk.

Mr. SMALL. This is not only a question of commerce from Boston to New York, but also from Maine points—shipping from all ports of Maine that go south—all the New England coast.

Gen. TAYLOR. All the New England coastwise business practically. I think there is no appropriation, or very few appropriations, for which an estimate is submitted where there is a larger commerce which is benefited by the work which is done than there is by this.

Mr. DEMPSEY. What have been the average of expenditures there for the last five years?

The CLERK. \$44,900.

Mr. DEMPSEY. What has been the largest expenditure in any one year?

The CLERK. \$105,000 in 1917.

Gen. TAYLOR. The reason why there have been so small expenditures in the last five years is because we took the dredge off during the war and did no work.

#### HARBOR OF REFUGE AT NANTUCKET, MASS.

Mr. DEMPSEY. Your next item is harbor of refuge at Nantucket, page 151. That is a harbor of refuge for vessels plying between what points?

Gen. TAYLOR. All the fishing vessels plying in that vicinity.

Mr. DEMPSEY. It has a comparatively small amount of commerce, I see.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Is it a harbor that is used as a harbor of refuge a good deal or not?

Gen. TAYLOR. I think it is not used now as much as it was formerly, for the reason the increased size of vessels make it less necessary.

Mr. DEMPSEY. Then it comes down to a question of the usefulness of the harbor as such—that is, to what extent it is being and is going to be used. That is the proposition, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What is the maintenance fund and the proposed further improvement fund; what are they to be used for?

Gen. TAYLOR. They are to be used to complete the extension of the west jetty, repair the east and west jetties, to fill the gap in the east jetty near the shore with a view to reducing the amount of sand entering the channel through the jetties and diminish the tendency to shoal on the outer bar.

Mr. DEMPSEY. Have you anything to show the size of vessels that enter there?

Gen. TAYLOR. Thirty-four per cent of the freight tonnage, having a value of 67 per cent of the total of all freight, was carried in vessels of a draft of from 7 to 10 feet. In other words, they are small.

Mr. DEMPSEY. The work, then, is to prevent, as I understand it, the washing in of sand and other material, filling up the dredged channel?

Gen. TAYLOR. Yes, sir.

The CHAIRMAN. And your average depth now is how much; 14 feet?

Gen. TAYLOR. Yes; and over the anchorage is a depth of 12 feet.

Mr. DEMPSEY. The project is about 95 per cent completed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Would this amount of \$35,000 complete the project?

Gen. TAYLOR. Yes, sir; that would complete the project.

Mr. DEMPSEY. And what would you say as to the effect of leaving that work uncompleted? Is it necessary to preserve what we have?

Gen. TAYLOR. I think the \$35,000 for the further improvement is not nearly as necessary as the \$25,000 for maintenance. I think that no serious harm would be done by leaving off the \$35,000, but I do think it is advisable to have the \$25,000.

Mr. DEMPSEY. You think that \$25,000 would put the present project in a state where the work would be preserved?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. How much was expended, Mr. Clerk, on the average, in the last five years?

The CLERK. There were no expenditures for improvement work, and the average for maintenance was \$1,185.

Gen. TAYLOR. It has been some time since any maintenance work has been done; for that reason it makes it all the more necessary that we should have something now. In many of those little harbors we let those maintenance items accumulate until there is a sufficient work to make a reasonable contract advantageous. We could not go there and put just a few tons of stone on the jetty, for instance, or dredge a few yards of sand each year, so it is allowed to go until it becomes in rather serious condition; then we go ahead and complete the work.

#### NEW BEDFORD AND FAIR HAVEN HARBORS, MASS.

Mr. DEMPSEY. The next item. New Bedford and Fair Haven Harbors, Mass., found on page 154. That harbor has quite a considerable business, has it not?

Gen. TAYLOR. Yes, sir; it has.

Mr. DEMPSEY. The business, I see, has been increasing somewhat. Now, the project is in what shape?

Gen. TAYLOR. The project is 91 per cent completed.

Mr. DEMPSEY. This expenditure is entirely for maintenance, I believe.

Gen. TAYLOR. Yes, sir; entirely for maintenance. Recently there have been some complaints about the lack of depth. I do not have the record with me.

Mr. DEMPSEY. What has their traffic shown as to the use of the harbor; I mean as to what kind of vessels use it?

Gen. TAYLOR. You mean steamers?

Mr. DEMPSEY. No; the size of the vessels, the draft?

Gen. TAYLOR. They use as deep draft as they can get in there; they have to take advantage of the tides in order to get in.

Mr. DAVIS. Upon what do you base your estimates of maintenance, General?

Gen. TAYLOR. Experience.

Mr. DAVIS. Do you base it upon present costs of material, present costs of labor, etc.?

Gen. TAYLOR. Yes, sir.

Mr. DAVIS. Then if the cost of material and labor, before you expend this money, was to go down considerably—

Gen. TAYLOR. We would save some money; we would hope to save some money.

Mr. DAVIS. And these estimates of maintenance are based on present conditions of affairs?

Gen. TAYLOR. Yes.

Mr. DAVIS. That applies all through the bill?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is on the condition of affairs at the time the estimates were made?

Gen. TAYLOR. Yes.

Mr. DAVIS. When were these estimates made?

Gen. TAYLOR. June, 1920. They were submitted the 30th of June, 1920.

Mr. DAVIS. Of course everything was at its peak then.

Gen. TAYLOR. Everything was at its peak then, but I think up to the present time there has been very little, if any, decline in the wages of the seamen; they are the people who have probably forced wages higher than any other class; that is, compared with what they were before the war, there has been a greater increase in the percentage of their wages, and at the present time, as far as I know, there has been no decrease in their wages, and with the increased shipping which we have and the relatively few sailors and men capable of handling that shipping, I see no prospect of any marked decline in wages in the very near future.

Mr. DEMPSEY. I seen on page 155 that here is what you say about th work, that what you propose to do is to complete the dredging by the use of the dredge about a month, and that the project is completed except at a few points on the southwesterly point of the anchorage area, which do not materially affect the use of the harbor, and except the 18-foot channel extending up the Acushnet River to Belleville, and the latter part, the channel to Belleville, I see you are not going to do because the condition requiring local cooperation has not been complied with.

Gen. TAYLOR. That was adopted subject to the condition that a bridge be rebuilt with a larger draw span, and they say they do not

want to put the money into that bridge, so we can not go ahead with that part of the project. That has been in suspense for several years.

Mr. DEMPSEY. What do you think about this thing?

Gen. TAYLOR. I think they ought to have the money to redredge portions of the harbor necessary to be redredged.

Mr. DEMPSEY. This is not redredging; I think it is just a question of completing the dredging.

Gen. TAYLOR. No, sir; with the funds asked for it is proposed to complete the work of maintenance dredging by the use of the Government dredge. This is a redredging job entirely; it is not a question of continuing any work on the project.

Mr. DEMPSEY. Mr. Clerk, let us know what we spent on that the last five years, on the average, and what is the largest amount on this New Bedford item.

The CLERK. The average for improvement is \$11,388, and for maintenance, \$3,203.

Mr. DEMPSEY. What is the largest amount?

The CLERK. There was expended \$14,617 last year for maintenance.

Gen. TAYLOR. The improvement, you will notice, was completed in 1917—\$50,000, and a little more was spent that year for completing the improvement—so, of course, that made practically no maintenance necessary for the next two years, and very little was spent the next two years. Last year \$14,600 was spent, but that did not remove all of the accumulated shoaling, and what we need now is this additional money to remove the shoaling accumulated since the work was completed in 1917, or about four years.

#### PROVIDENCE RIVER AND HARBOR, R. I.

Mr. DEMPSEY. The next item is Providence River and Harbor, R. I., page 163. This, I see, Gen. Taylor, is quite an important harbor?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. It has nearly 3,000,000 tons of traffic, of a value of \$424,000,000.

Mr. SMALL. It has been suggested that we might omit that; that the work was not absolutely essential at this time. You might question the general about that.

Mr. DEMPSEY. This amount is necessary to complete this project?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The project that is described at page 163 is to provide a depth of 30 feet for a channel 1,300 to 1,800 feet wide and 10 miles long.

Gen. TAYLOR. That channel 1,300 to 1,800 feet wide is from Fox Point to Fields Point—that is, in the harbor proper. The channel leading to the harbor has a width of only 600 feet. The wide part of the harbor is about a mile and a half only in length. It is on that portion of the harbor that the wharves are located, and that width is necessary for giving proper access to the wharves and for turning purposes, anchorage, and purposes of that kind.

Mr. DEMPSEY. Above Fields Point the entire harbor up to Fox Point has been dredged to a depth of 25 feet, I see [referring to p. 164 of the record]?



Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And about 37 per cent of it has been dredged to 30 feet?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And it is simply a question of dredging the remaining 63 per cent from 25 to 30 feet?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Mr. Clerk, will you tell us about the boats there, what the drafts of the boats that used that harbor for the past year ordinarily has been?

The CLERK. In the report it is stated "of the total commerce of the port it is estimated about 57 per cent, representing 33 per cent of the value, was carried in vessels of from 19 to 29 feet draft."

Mr. DEMPSEY. And there is a tide there, I see, Gen. Taylor, of 4.7 feet?

Gen. TAYLOR. Yes, sir. They have been endeavoring to establish regular lines to foreign ports, and those boats are handicapped by the present lack of sufficient depth.

Mr. DEMPSEY. By saying that 37 per cent has been dredged (that is a little over one-third), to 30 feet, your channel is 600 feet, that would give you a 200-foot channel, a little over 200-foot channel, of 30 feet depth, would it not?

Gen. TAYLOR. The approach channel has been dredged to 30 feet.

Mr. DEMPSEY. For the entire 600 feet?

Gen. TAYLOR. For the entire 600 feet.

Mr. DEMPSEY. And 37 per cent of the harbor?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Page 165 describes what it is proposed to do, does it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, you have on hand available for that work, or you had on hand July 1, last, \$212,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Have you anything to show what you have on hand to-day?

Gen. TAYLOR. Yes, sir. We have since that time made a contract for dredging, and on the 1st of December we had \$142,816 covered by contract and outstanding obligations, and a balance of \$41,016 not covered.

Mr. DEMPSEY. But the work on that contract has not been done, has it?

Gen. TAYLOR. No, sir; that has not been done. That, of course, will increase the percentage of the work above Fields Point that is dredged to 30 feet, quite considerably. It will give more than one-half of that harbor dredged to 30 feet.

Mr. DEMPSEY. And that means that you will have, first, an approach 600 feet wide, then you will have a harbor somewhere from 650 to 900 feet in width?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And do you not think taking the whole situation into account as it is, that they could do for the next year with the amount of funds on hand?

Gen. TAYLOR. Yes, sir; I do.

## PAWCATUCK RIVER, R. I. AND CONN., MAINTENANCE.

Mr. DEMPSEY. The next item is a small one—Pawcatuck River, R. I. and Conn., page 176 of the record. Have we any statistics here showing the size of the town of Westerly?

The CLERK. The population in 1900 was 7,541; in 1910, 8,696; and in 1920, 9,952.

Mr. DEMPSEY. Do you know anything about that, Gen. Taylor?

Gen. TAYLOR. No, sir; it is a small town.

Mr. DEMPSEY. I see they say on page 178, under effect of the improvement, the improvement affords the town of Westerly the benefit of water transportation, which could not be carried on under modern conditions in the river in its natural state; the improvement has resulted in the reduction of water rates on bulk commodities, and I see on page 179 that the traffic carried in 1919 was less than 30,000 tons. What has been the average expenditure the last five years?

The CLERK. It has been \$1,180 for maintenance and \$9,860 for improvement.

Mr. DEMPSEY. That is a pretty small project, is it not?

Gen. TAYLOR. Yes; it is.

Mr. DAVIS. I understood the general to say it is quite valuable up there; that they get all the stone blocks used in the city of New York.

Gen. TAYLOR. It used to be one of the places from which the large part of the paving blocks used in New York came from, and they still produce considerable granite there. Granite is carried out and coal is carried in there.

Mr. DEMPSEY. The vessels trading there are barges, small schooners, drawing from 7 to 10 feet?

Gen. TAYLOR. Yes; but this project is only 10 feet.

Mr. DAVIS. I have been on committees where they sometimes cut these things in two—in the middle—if we thought you could get along with less.

Gen. TAYLOR. It requires that much to restore the channel to its project dimensions; that is, to remove the shoaling which has occurred since any maintenance work has been done. You see, it has been quite a number of years since any maintenance work has been done there at all.

Mr. DEMPSEY. What is required is explained fully at the bottom of page 177 and top of page 178, is it not, General?

Gen. TAYLOR. The bottom of page 178 states the proposed operations.

Mr. DEMPSEY. The channel now has a general width of 100 feet?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And in the Pawcatuck Rocks a width of 80 feet and an average depth of about 9 feet to Westerly and 6 feet to Watch Hill, and the work that you proposed is the widening of the channel 200 feet to Avondale and the removal of the rock at Pawtucket and the boulders from the vicinity of Rhodes Folly Beacon.

Gen. TAYLOR. The channel as it is now finished, Mr. Chairman, is sufficient for all practical purposes; that width of 200 feet crossing Little Naragansett Bay is, in my opinion, entirely unnecessary; that project was adopted a good many years ago, when the estimated cost

was a good deal less and before we were fully cognizant of the character of the material. When the dredging was commenced it was discovered that in the bottom there were embedded a great many bowlders, which made it a very expensive proposition to dredge, so we have not attempted to get the full width of the channel; we have a channel 100 feet wide and 10 feet deep, and that is reasonably sufficient for navigation. What we should do, though, is to maintain the present channel and take out a few more bowlders that are in the channel which has already been dredged.

Mr. SMALL. Assuming you should have the \$15,000 for maintenance, could you get along without the additional \$3,000 for further improvements?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Assuming you had the \$3,000 for further improvements?

Gen. TAYLOR. If we had the \$3,000 what we would probably do would be to use that for maintenance. That is more important than taking out the additional bowlders.

CONNECTICUT RIVER BELOW HARTFORD, CONN.

Mr. DEMPSEY. Your next item, Gen. Taylor, is the Connecticut River, at page 189 of the record. I see at page 192 that the traffic there in 1919 was 283,000 tons, of the value of \$54,000,000. The traffic is large, but it has apparently been somewhat less last year than previous years.

Gen. TAYLOR. The principal traffic on that river is coal. It is taken in barges up to Hartford and used or transshipped at that point. You see last year there was a very great falling off in the coal shipments, that accounts for the decrease in commerce on the river.

Mr. DEMPSEY. You regard this as quite an important improvement, do you not?

Gen. TAYLOR. I regard it as a very important improvement; yes, sir. The coal for Hartford, and that section of Connecticut, practically all goes in there by water.

Mr. DAVIS. That includes the maintenance charge?

Gen. TAYLOR. Yes, sir; that includes the maintenance charge. Every spring, after the annual freshet, there is shoaling in the river and it becomes necessary then to remove those shoals. We are also doing some revetment work with a view to training the river in such a way as to reduce that shoaling. That will afford considerable benefit and will be instrumental in bringing about a lesser cost in the annual maintenance, a less amount of dredging, and less interference with navigation. As the river goes down after the spring freshet there is always a good deal of difficulty. We have to dredge and have to shift around from one shoal to another, to the worst spots, take off one spot, then shift to another shoal and take that off, and it requires three or four months very active work in order to restore the channel to a proper condition.

If we do not expend that maintenance money—between \$15,000 and \$20,000—navigation on the river would be very seriously interfered with. The additional expenditure of \$75,000 is for putting in

permanent work, which will eventually reduce that annual expenditure, which is now in the neighborhood of \$20,000.

Mr. DEMPSEY. Tell us what you mean by that, General.

Gen. TAYLOR. I mean there are certain places in the river that always shoal, due to the river widening out or cross currents. We are putting in a system of dikes and training walls which will straighten out the currents in such a way as to prevent the shoaling.

Mr. DEMPSEY. What do you mean by dikes, as applied to this work?

Gen. TAYLOR. It is a construction of piles and brush and stone; it is a training wall.

Mr. DEMPSEY. At the side?

Gen. TAYLOR. Yes, sir. We call it a jetty.

Mr. DAVIS. Will this \$75,000 virtually complete this project?

Gen. TAYLOR. About one-half.

Mr. DEMPSEY. You estimate to complete it, \$136,870?

Mr. DAVIS. That is very nearly in line with the original estimate of cost?

Gen. TAYLOR. Yes.

Mr. SMALL. Do you regard it as essential to be appropriated in this bill both the item of maintenance, \$15,000, and improvement, \$75,000?

Gen. TAYLOR. I regard the item of maintenance as absolutely essential and regard the item of improvement as extremely desirable. I think it is a wise investment, a profitable investment.

Mr. DEMPSEY. In other words, the effect will be this, as I understand it: You have places in this Connecticut River which, by the way, runs through a very rich valley?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Both in an agricultural and in a manufacturing way?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. There are places where the river widens out, and where it widens during flood times you get a considerable shoaling?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is, a washing?

Gen. TAYLOR. A deposit of sand.

Mr. DEMPSEY. A bar, and what you suggest is that we narrow that to the average width by dikes and confine it in that way within that channel, and the result will be that your washing will be within that limit and you will get gradually a hardened or better channel bottom?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And besides that you will only be washing perhaps one-half, one-third, or one-quarter of the width that you do to-day?

Gen. TAYLOR. Yes, sir; we direct the current so it will scour instead of shoal.

Mr. DEMPSEY. At the same time I suppose you will increase the acreage of the agricultural land?

Gen. TAYLOR. No, sir; because we do not build our dikes sufficiently high to make land; what we are doing is to confine the water up to a certain height; when it gets above a certain height we have to let it spread out.

JANUARY 8, 1920.

## NEW HAVEN HARBOR, CONN.

Mr. DEMPSEY. The next item is the New Haven Harbor, beginning on page 197. Now, that item is simply a maintenance item, and the funds are to be used, as stated at the top of page 200, for the restoration of project dimensions?

Gen. TAYLOR. It also states that the amount on hand is not sufficient to complete the redredging of the channel that has actually shoaled.

Mr. DEMPSEY. That is a large harbor, I see.

Gen. TAYLOR. Then you will notice also that the city contemplates some wharf improvements there, and that this redredging is necessary in connection with that work there.

## MILFORD HARBOR, CONN.

Mr. DEMPSEY. The next item is \$14,000 for Milford Harbor, Conn., page 201. That is a very small harbor?

Gen. TAYLOR. It is a small harbor; but you will notice that there has nothing been spent on it for the last five years, and that it has shoaled considerably.

Mr. DEMPSEY. Where is Milford Harbor?

Gen. TAYLOR. It is on the coast of Connecticut between New Haven and Bridgeport. It is just west of New Haven. That is near the center of the oyster industry of Long Island Sound. There is a large fleet of oyster boats that use that harbor, and they draw 10 feet as a rule. It is between New Haven and the Housatonic River, about halfway between New Haven and Bridgeport, west of New Haven.

Mr. DAVIS. Will you permit me to ask you a question, General? Of the two items, maintenance and improvement, which do you consider the more important?

Gen. TAYLOR. The maintenance items are important. They are especially important just now, due to the fact that for several years past the maintenance work has fallen behind. During 1917 and 1918 it was very difficult to get any plants at all—to let any new contracts. Everybody was engaged on war work. Many of these channels were allowed to deteriorate. We could not get plants. In 1919 it was very difficult to get anything done on account of the extremely high prices. Everything was clear out of sight.

Mr. DAVIS. That was my idea, that maintenance is very important right now, and that if we could not do everything, if we had to cut anywhere, it would be better to keep up the maintenance and cut on the improvements.

Gen. TAYLOR. Then again, this last year, we had a bill of only \$12,000,000 for all the river and harbor work in the country, and we had to distribute it at the points where it was most urgently needed, taking into consideration the interests of commerce.

Gen. BEACH. I would like to state that I do not believe that you can take that as a general rule applicable to all cases. What Gen. Taylor states is correct in general, but we have in some cases harbors

that are developing business quite rapidly, and some of the older harbors are losing their business, which these new harbors are acquiring.

Mr. DAVIS. Those are exceptional cases, though?

Gen. BEACH. You will find in some instances exceptions, but, as a general rule, just as has been stated, maintenance is the more important.

Gen. TAYLOR. I do not think there is hardly any case where maintenance is not necessary, while in some cases further improvements are not so necessary. In some cases, however, further improvements are necessary on account of recent developments.

Mr. DEMPSEY. This is one of the relatively unimportant harbors?

Gen. TAYLOR. Yes, sir; but on which no maintenance has been done for the last 15 years.

Mr. DEMPSEY. Since 1905?

Gen. TAYLOR. Since 1905; and it is now important to remove the shoaling that has accumulated in all that period.

Mr. DEMPSEY. Is there any traffic there, except of the oyster boats?

Gen. TAYLOR. It is almost altogether oyster boats. It is used as a harbor during the summer by quite a lot of yachts. All of those small harbors are used by yachts.

#### HOUSATONIC RIVER, CONN.

Mr. DEMPSEY. The next item is for \$16,000, Housatonic River, Conn., page 204. This is a considerably larger harbor, I see, with a tonnage of over 208,000 tons.

Gen. TAYLOR. That is principally coal going up to the towns of Derby and Shelton at the head of the navigable section of the river; and the river, even when the project is maintained, has proved only sufficient for boats to navigate on high tide. They have to use it altogether on high tide. The project depth is 7 feet, and the boats that use it draw in the neighborhood of 10 to 12 feet, so that they start at the bar with the flood tide and go up the river on flood tide and come out the same way. They come down on the tide, and any shoaling there consequently is very important, as it seriously interferes with that business.

Mr. DEMPSEY. I always keep coming back to my old favorite, Buffalo. Here is a harbor with a project of 10 feet deep, with 200,000 tons of traffic, and we provide an entrance 200 feet wide, which is just as large as the entrance to the Great Lakes, with a harbor that has millions of tons of traffic per year, and yet we do not seem to be able to get a favorable report on enlarging that entrance.

Gen. TAYLOR. That is the entrance in the river itself?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. That is, inside the breakwater; you mean in the river itself. The conditions are quite different at the two places.

Mr. DEMPSEY. I know it.

Gen. TAYLOR. You have a great deal more traffic, of course; but, incidentally, the Buffalo entrance is really an easier entrance when you get inside the breakwater; and also, as you perhaps know, it is going to cost many million dollars to enlarge that entrance there. You would have to remove either the piers on the north side or the

piers on the south side, which have been built at quite a large expense, and dredge a lot of rock and do a lot of other very expensive work, and then when you get inside the harbor entrance, unless you continue that widening all the way up the river, you do not gain very much, because the condition at the entrance is not very different than farther up the river, and if you widen it clear up you have got to destroy some of the built-up portion of the city.

Mr. DEMPSEY. By widening the entrance you would avoid turns in bad weather.

Gen. TAYLOR. The turn is outside of the entrance to the river, and since the changes in the north pier have been made, since the Delaware, Lackawanna & Western has made those changes in the north pier and now moors its vessels really out of the channel, the difficulties have been very greatly diminished. It is much easier now than it was when the Lackawanna used to moor its coal boats alongside the pier and blocked about half what channel there was.

Mr. DEMPSEY. I think that is true. On this Housatonic River, General, I understand, from page 206, what you propose is dredging to restore the project?

Gen. TAYLOR. Yes, sir. The Housatonic is a river very similar to the Connecticut River, so far as shoaling is concerned. Every spring after the freshet we have got to go in and redredge that channel. On account of the less amount of water in the river it is more difficult to maintain than the Connecticut River, and you will notice that the project depth is such that it provides for 7 feet, whereas the Connecticut River is 12 feet.

Mr. DEMPSEY. What is the size of these towns—Shelton, Derby, and Stratford?

Gen. TAYLOR. The principal towns are Derby and Shelton, manufacturing towns. Stratford is a little bit of a town, and incidentally, it is one of the most beautiful little towns I ever saw. At the time I was there, about 10 years ago, I do not think there had been anything done in it in 100 years. It has wide streets with elm trees that come together over the street, a used part in the middle of the streets and grass growing along the edges. It is an old place of which the principal inhabitants are the old-time sea captains. They go in and settle down and do not do a thing. I have not been there for 10 years, but up to that time I do not think any change had been made for 100 years. A little coal and a few oysters are brought in there, but the principal ports are the manufacturing towns of Derby and Shelton. Derby had 9,000 in 1910, and the other two had less than 5,000.

Mr. DEMPSEY. I see the traffic is something over 200,000 tons, and the value is \$3,500,000.

Gen. TAYLOR. Yes, sir.

#### BRIDGEPORT HARBOR, CONN.

Mr. DEMPSEY. The next item is Bridgeport Harbor, Conn, page 207. Now, that is one of the rapidly developing parts of the country, is it not?

Gen. TAYLOR. It is; yes, sir.

Mr. DEMPSEY. In 1919 they had over 1,000,000 tons of freight of a value of \$119,000,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The principal items of traffic were merchandise, coal, sandstone, and iron and steel products. Eighty per cent of the commerce is carried on a draft of about 14 feet.

Gen. TAYLOR. That is the coal, largely, that goes in on a 14-foot draft.

Mr. DEMPSEY. Now I see that their main channel is 21 feet deep, and then that varies down to 16, a considerable part of it 11½, 9, and 12 feet. The improvement items seem to be figured at the bottom of page 210.

Gen. TAYLOR. That is what it is proposed to do with the money on hand on the 30th of June.

Mr. DEMPSEY. \$40,000?

Gen. TAYLOR. \$40,632.

Mr. DEMPSEY. What is your estimate of what you are going to do with \$75,000?

Gen. TAYLOR. That is on the next page.

Mr. DEMPSEY. That \$75,000 is for dredging to 18 feet.

Gen. TAYLOR. For dredging the 18-foot basin and channel. You see, that is another case where maintenance has been deferred. There has been no work done there since 1912, the last eight years.

Mr. DEMPSEY. Is there any statement of how much that 18-foot basin and channel have filled in? Of course, you say you are going to dredge 200,000 cubic yards.

Gen. TAYLOR. That is based on an estimate. Do you mean how much it shoaled in feet?

Mr. DEMPSEY. I mean what is your depth now in the basin and channel? Have you anything to show that? I see you say at the top of page 211, "No maintenance work has been done on the 18-foot channel—now basin—in the main harbor since 1912, nor in the Poquonock River since the completion of 1911, nor along the layout of the present 18-foot harbor channel since the former date. Extensive shoaling has taken place in these areas from the inner breakwater to the head of navigation. It is believed that the 18-foot depth should be restored as far as the East Washington Avenue bridge, where the condition of the bridge prevents further deepening at the present time."

Gen. TAYLOR. There is nothing stated as to the amount of work—that is, in feet—in that particular estimate.

Mr. DEMPSEY. But you estimate that you would have to excavate 200,000 cubic feet, and that would be a matter of computation in accordance with the size of the basin.

Gen. TAYLOR. That is all.

Mr. DEMPSEY. Here is a question that occurred to me, General. This work is to restore a depth of 18 feet, and I see that 80 per cent of the traffic is on a draft of 14 feet.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That would leave only 20 per cent of the traffic, a considerable but not a large amount—200,000 tons we will say—which comes in above 14 feet; how much above we do not know.

Gen. TAYLOR. It runs up to the full depth; up to 20 feet. They use that channel right up to the full available depth.

Mr. DEMPSEY. We all recognize that this is an important harbor and it is very rapidly growing, and an important city, but despite



all that the question is suggested to my mind, after examining the details of this statement, whether they really need more than 14 feet there at the present time.

Gen. TAYLOR. They do, Mr. Chairman; I am perfectly satisfied of that. Formerly we had no anchorage basins of more than about 12 or 14 feet, with continuing trouble there, and the result was that they were having collisions and all kinds of difficulties. It was as a result of these difficulties that the anchorage basins were dredged, so that these boats, of which there were a good many coming in there, could be anchored out of the channel.

#### DREDGE BOATS.

Mr. DEMPSEY. Let me ask right here, in connection with this item, have you done this? You know how many dredges you have, do you not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You know about how many dredges will be available for contract work, do you not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Have you taken the capacity of those dredges during the working season and ascertained it and then compared that with the estimate for improvements and maintenance to see whether, suppose we appropriated every dollar of this money, what part of it could actually be done with the available machinery?

Gen. TAYLOR. I think there would be no difficulty whatever in doing it all.

Mr. DEMPSEY. Well, now, it will be very helpful, it would be a very simple computation.

Gen. TAYLOR. It would not be a simple computation. It would if we had an accurate census of the dredges in the country and the work upon which they are engaged. As a matter of fact in 1918 we made an accurate tabulation of the dredges throughout the United States.

Mr. DAVIS. About how many have you now?

Gen. TAYLOR. I can not answer that even approximately.

Mr. SMALL. You are referring to Government plants?

Mr. DAVIS. Yes.

Gen. TAYLOR. I can give it to you.

Mr. DEMPSEY. If that could be done easily—

Gen. TAYLOR. We have different types of dredges. We have what we call a seagoing hopper dredge. Of those we have approximately 30. Then we have pipe-line dredges—20-inch and 15-inch pipe-line dredges—and two or three smaller ones. Then we have dipper dredges.

Mr. DAVIS. You know where they are located approximately at any time.

Gen. TAYLOR. Yes.

Mr. DAVIS. I think that your suggestion, Mr. Chairman, to have a detailed statement in the record is very good.

Gen. TAYLOR. In addition to that, Mr. Davis, there is a very large quantity of contractors' plants, and most of our work is done by contract, and the amount of contractors' plants available for Government work depends very much on how much private work they

are doing. There is comparatively little private work being done at present.

Mr. DAVIS. Why?

Gen. TAYLOR. Nobody has any money to spend on that kind of work.

Mr. DEMPSEY. The same reason is this business as in all other lines.

Gen. TAYLOR. The result has been that for the last year or so there has been a great amount of plant idle.

Mr. DEMPSEY. Then you ought to be able to get real favorable terms.

Gen. TAYLOR. I think we will. I think there is going to be a very decided competition; very great competition this next year for work.

Mr. DAVIS. That may affect your estimates, then?

Gen. TAYLOR. It may affect the estimates.

Mr. DEMPSEY. It will affect the estimates.

Gen. TAYLOR. It will undoubtedly.

Mr. DEMPSEY. The next proposition is this, General: Has there been any great addition by building to the number of dredges since this survey was made in 1918?

Gen. TAYLOR. No, sir. I doubt if there has been a dredge built in the last two years.

Mr. DEMPSEY. Has the Government built any?

Gen. TAYLOR. No. We have bought two, however, in the last two years. We had an opportunity to get them at favorable prices, and we bought two. One of them we sent to San Juan, P. R., for use in the San Juan Harbor, and one to the Galveston district to use on the Texas coast.

Mr. SMALL. What is the name of the dredge on the Texas coast?

Gen. TAYLOR. It is a 15-inch pipe-line dredge.

Mr. SMALL. It is an improvement on the old *Comstock*?

Gen. TAYLOR. No, sir; not the same type. The *Comstock* is a seagoing hopper dredge. This is a 15-inch pipe-line dredge for use in the small waterways.

Mr. DEMPSEY. General, let us find where your report is on what you are going to do with the money for further improvements.

Gen. TAYLOR. That is given on page 211, in the middle of the page. There is a total for maintenance of \$75,000.

Mr. DEMPSEY. I thought there was something descriptive besides that statement?

Gen. TAYLOR. No, sir.

Mr. SMALL. There is a preceding paragraph.

Mr. DEMPSEY. That seems to be almost entirely devoted to maintenance.

Gen. TAYLOR. That is all maintenance.

Mr. DEMPSEY. "Dredging Black Rock and Cedar Creek Channels, 274,200 cubic yards, at 30 cents." Is that the peak price during the war for this kind of dredging?

Gen. TAYLOR. That was probably based on the last contract price which we have had in that section.

Mr. DEMPSEY. Now, does it appear here anywhere what the depths of Black Rock and Cedar Creek Channels are?

Gen. TAYLOR. Twelve feet is the project depth.

Mr. DEMPSEY. What are they now?

Gen. TAYLOR. They have a depth of 12 feet, but they are very narrow.

Mr. DEMPSEY. How narrow? Here it is at the bottom of page 209, "In Black Rock and Cedar Creek a channel of 12-foot depth has been dredged to a width of 100 feet."

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. How wide is it proposed to make it?

Gen. TAYLOR. From 150 to 200 feet. Page 208, item 8, "100 feet wide at the head of navigation." A width of 100 feet is not sufficient for tows to pass, you see, and all of the business practically that is done on those two channels is towing business. That is the manufacturing part of Bridgeport, and it is surrounded entirely, those two channels, with factories, and a large amount of coal for the operation of those factories is shipped in there by water.

#### EXPENSES FOR ADMINISTRATION, INSPECTION, AND CONTINGENCIES.

Mr. DAVIS. This may be very plain to nearly everybody, but is there any objection to putting into the record what constitutes "administration, inspection, and contingencies"? Take in this case that we are talking about, \$7,740, and at the end of every item we have "administration, inspection, and contingencies." What does that consist of?

Gen. TAYLOR. In the first place we have a district office. We have to pay for the rent of that office. We have to pay for all the clerical help of the office. We have assistant engineers who are in charge of the field work, and if we do it by contract—

Mr. DAVIS. Are not they mostly Government employees on a salary?

Gen. TAYLOR. No, sir; they are paid out of the appropriation for the work. Our entire river and harbor work is paid out of the appropriation, except the salaries of the district engineers—the officers of the Army who are in charge of the district. All other expenses of the district are paid out of the appropriation.

Mr. DAVIS. Do you not have those same employees and the same office rented whether you do this work or not?

Gen. TAYLOR. No, sir. We expand or contract as the occasion calls for it.

Mr. DAVIS. That is what I wanted to know, whether or not the force was present all the time or whether you increased or decreased as the work progressed.

Gen. TAYLOR. We increase or decrease as the necessity demands.

Mr. DAVIS. Another little matter over here: You have maintenance charge, etc., and one of \$1,749 for administration, inspection, and contingencies. I did not know whether it was all done from the same office, the same employees, and hence there would be no particular necessity for segregating them.

Gen. TAYLOR. The proposition is to charge the office expense of the central office up in its proper proportion to each work done.

Mr. DEMPSEY. Its percentage?

Gen. TAYLOR. We do not charge it up on a percentage basis, but charge all the work we do. We allot at the first of the year according to percentage, but on some small work during the year we may

have to make a survey. Where any work is done the survey must be charged to that appropriation.

Mr. DEMPSEY. Are there any questions about Bridgeport?

Mr. SMALL. Just this, unless it has already been asked and answered. I observe an estimate of \$75,000 for maintenance and \$90,000 for further improvements. Are either or both of those essential?

Gen. TAYLOR. I would say that the maintenance item is essential. The further improvements item is very desirable but commerce can be carried on, at some inconvenience.

Mr. SMALL. But by reason of the deterioration and other factors, the omission of the appropriation for maintenance would be especially disastrous to the port?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What he says, Mr. Small, about this is that it is a harbor where the bulk of the transportation is coal which is brought in on 14-foot draft, 80 per cent of it, and there is 20 per cent that is brought in on varying drafts up to the deep draft, and it is a question of restoring the project depth of 18 feet which has shoaled in. The other matter is a question of doubling the width of the entrance from 100 feet to 200 feet.

Gen. TAYLOR. You will notice, Mr. Chairman, that the project takes in all of Bridgeport Harbor and its approaches, provides for drafts of different depths and width of channel. Those were all figured out in order to give what was needed with as little expense to the United States as possible. Those branches have been filled up. If we widened each, it would necessitate tearing down structures all through there. The result was that we figured what the least was each one could get along with. They have to use the tide there. That is tide navigation. That is why it is important that this channel should be widened. They have to go in and out on the tide.

#### RAILWAYS AND WATERWAYS IN NEW ENGLAND.

Mr. ROGERS. May I ask a general question about these New England projects, and perhaps I am speaking as a New England man in this inquiry? The New York, New Haven & Hartford Railroad, which is our great means of communication with the rest of the country, has, through its president, urged quite recently the maximum development of our rivers and harbors in New England for transportation, and especially for coal transportation, on the theory that the New York, New Haven & Hartford Railroad in getting past the neck of the bottle which connects New England with the rest of the country could not handle more than a certain maximum of traffic, which was far too little for New England's needs. Is it true, General, that under those conditions the problem in New England in the matter of developing these harbors is peculiar in that the railroads welcome and urge the development of New England rivers and harbors instead of, as in some other parts of the country, believing that similar development is a detriment to the railroads themselves?

Mr. DAVIS. It is almost general, I think, throughout the balance of the United States.

Mr. ROGERS. I think that is probably true. To my mind it is almost unprecedented in the history of the United States to have a

railroad president urging the development of rivers and harbors in the country covered by its railroads.

Gen. TAYLOR. The New Haven Railroad's attitude is probably based on past experience. If you remember, in 1907 there was a very great congestion of traffic all over the country, and particularly in New England. At that time the New Haven Railroad was pursuing a policy of buying up all of the floating plant in New England. They bought up every line, practically, that ran into New England and then tied up the boats.

Mr. SMALL. They bought everything except one independent line.

Gen. TAYLOR. Then they tied up the boats, forcing the coal-carrying companies and boat lines out of business, so as to force all the business onto the railroads. The result of that action was that the New Haven road became so congested that it was utterly unable to handle even a fraction of the traffic that was offered to it. It seems to me that if instead of fighting the boats they had turned over to the boats all the coal that the boats could possibly have carried, that would have enabled the railroads to carry the high-class freight which was offered to them, and they could have kept the manufacturers going. I spoke yesterday of the conditions at Springfield during that period. It was the result of the action of the New Haven road.

Mr. DAVIS. That was under the management of Mellen?

Gen. TAYLOR. Yes, sir. That is probably very largely responsible for the condition in which the New Haven road is to-day.

Mr. DEMPSEY. Mr. Rogers, who did I understand you to say urged this development in behalf of the New Haven?

Mr. ROGERS. The president of the railroad at that time—but I am not quite sure whether he is the president still or not—was a Mr. Buckland. A long statement was carried in the press and apparently was an official and considered utterance of the president of the railroad, and it urged the development of waterways not only from the standpoint of the general consuming public of New England, but from the standpoint of the railroad of which he was the head.

Gen. TAYLOR. In the time I spoke of, in 1907, Mr. Buckland was one of the attorneys of the road.

Mr. ROGERS. Yes. This was within two or three years that I speak of, and, of course, the New Haven Railroad has a better name in New England than it had during the time Mr. Mellen was president.

Mr. DEMPSEY. Mr. Rogers, do you know whether the New Haven is extending its road to these harbors so that they can have exchange facilities, and whether it is joining in making through bills of lading; in other words, making practical and possible the thing which it advocates? Is it doing that?

Mr. ROGERS. I can not answer that, Mr. Chairman.

Mr. DEMPSEY. Suppose you find out about that, and we will be glad to hear somebody who would say that they are doing that. As I understand it, Mr. Martin, president of the Illinois Central Railroad, openly advocated the repression of water transportation development, claiming that the Illinois Central needed everything it could get. This was in the recent Water Transportation Congress held at Washington. Is not that correct, Mr. Small?

Mr. SMALL. Substantially.

Mr. ROGERS. Of course, Mr. Chairman, I do not imagine, and I assume that none of us will be inclined to imagine, that this was any unselfish policy. The geographical position of New England is such that the neck of the bottle through which our freight must pass is so small that the railroads can not receive and distribute all that New England needs for its essential use, and so, as the general has suggested, the railroads are apparently wise enough there to encourage a development which would give them the choice freight and leave for the steamship lines the rough, coarser freight, such as coal.

Mr. DEMPSEY. That is far from being confined to New England. That condition prevails just as well in New York and in the Middle States, and in all the territory leading to New York; and it is a very shortsighted policy, I have thought for years, for the railroads to insist on seeking to carry the whole volume of freight when they could, for instance, confine their efforts to such high-class freight as perishable products like fruit, on which they get a very much higher rate—several times as high as they get on coarse products.

Mr. ROGERS. Well, if the chairman will permit me, I will get and put in the record of this hearing a statement from Mr. Buckland, because I think it is of national interest.

(The statement referred to is as follows:)

NEW YORK, NEW HAVEN & HARTFORD RAILROAD CO.,  
OFFICE OF THE PRESIDENT,  
New Haven, Conn., February 11, 1919.

HON. JOHN J. ROGERS,  
House of Representatives, Washington, D. C.

DEAR SIR: The inclosed letter to Hon. Frederick H. Gillett, of the House Committee on Appropriations, is self-explanatory.

I am advised by the Geological Survey that New England consumes 30,000,000 tons of bituminous coal per year, to say nothing of anthracite; that 5 per cent of the coal mined is consumed in hauling the other 95 per cent to destination. The economic saving in transporting energy over wires instead of coal over rails is well worth the serious consideration of the Government and is of the utmost importance to New England. If this appropriation is not incorporated in the sundry civil bill as it comes from the House it should receive the serious attention of the Senate.

I bespeak your efforts to that end.

Yours, very truly,

E. G. BUCKLAND, *President.*

NEW HAVEN, CONN., February 1, 1919.

HON. FREDERICK H. GILLETT,  
House of Representatives, Washington, D. C.

MY DEAR MR. GILLETT: The inclosed printed copy of letter from the Secretary of the Treasury to the Speaker of the House and from the Secretary of the Interior to the Secretary of the Treasury, the former dated January 28 and the latter January 27, both recommending an appropriation to the Geological Survey for a special investigation and report on the power supply for the Boston-Washington industrial region, is of unusual interest to New England's manufacturing and transportation interests. I respectfully urge your favorable consideration and action thereon.

You are doubtless familiar with the difficulties experienced by New England regarding coal supply during the last four years. Beginning with the year 1915, the increased demand upon transportation companies for the carrying of coal, due to the large amount of war work performed in New England, was to a considerable degree the cause of the severe congestion of our railroads. This congestion continued during the period of the war, reaching its peak about a

year ago. At that time many industries were forced to curtail their coal consumption and some to suspend operation altogether. Since the armistice the situation has somewhat improved, but New England's coal supply is now and always will be the most serious single problem which confronts its factories and railroads.

It is the plan of the Secretary of the Interior to find out whether there is any practical means of solving the problem and overcoming the handicap. Is there any other way to supply energy to New England except by railroad and water-borne coal? If there is, it should be studied and developed. To those who have given thought to this important matter it appears entirely practicable to develop electrical energy at coal mines in New York and Pennsylvania and by water powers in those States and New England pour it into a trunk line and distribute it to factories, street railways, and railroads throughout New England and the North Atlantic seaboard. The railroad rights of way, including the bridges across the Hudson River, are obvious locations for such trunk lines. Every kilowatt of electricity so produced will displace a corresponding amount of coal and save the haulage, the wear and tear of track and equipment, and traffic congestion in periods of heavy business.

Moreover, the development of the automatic stoker has made possible the use at or in the vicinity of mines of large quantities of coal which is not of good enough quality to ship and which, therefore, remains in culm piles or is discharged into streams, thereby polluting the waters and filling the channels. It may also be possible to use coal at the mine level and save the labor and expense of hoisting.

Undeveloped water power in New England and on the North Atlantic coast can be turned into hydroelectric plants and connected into the trunk line. To carry electricity over wires into New England rather than to carry coal over railroad tracks is an alluring vision capable of being realized. A possible combination of unused culm piles and unsalable coal with the water powers of New England and the harnessing of an unused source of energy is well worth an intensive investigation.

It is of great interest and satisfaction to know that the Secretary of the Interior has that vision. I am sure that every interest in New England will enthusiastically favor the project to the end that this section of the country may be relieved of its most serious handicap. No other agency except the Government can conduct such an investigation with thoroughness or satisfaction.

I am coming to Washington on the 7th and hope to consult further with you in regard to this very important subject.

Yours, very truly,

E. G. BUCKLAND, *President.*

Mr. DEMPSEY. Write him a letter and ask these questions: "First, are you extending your railroads to the harbors at various New England places where you advocate improvements? Secondly, are you exchanging freight with the boat lines? Thirdly, are you making through bills of lading?"

Mr. ROGERS. The first question would be answered yes.

Gen. TAYLOR. By the fact that every harbor now in New England has ample railroad facilities.

Mr. DEMPSEY. Take the Milford Harbor, for instance.

Gen. TAYLOR. Yes; it is right on the main line of the New Haven between Boston and New York.

Mr. DEMPSEY. I know; but have they run their road over to the harbor so that you can unload the boat right onto the car? You have not any connection unless you have that.

Gen. TAYLOR. At Milford it would not be necessary, because the coal going in there is used locally. They do have it at Bridgeport and New Haven.

Mr. DEMPSEY. Those are big places.

Gen. TAYLOR. Those are big places, and those are the distributing points. At New Haven they have some large coal bunkers. Provi-

dence is a big coal-distributing point, and Fall River and other places where they haul coal they get rail connections right to the coal bunkers, from which the boats load directly into the bunkers.

Mr. SMALL. Mr. Rogers, I have been surprised during my service in Congress during the last 15 or 20 years to observe the apparent indifference of the people of New England toward the improvement of their rivers and harbors. It is the greatest industrial section of the United States, and naturally has a more acute interest in the problem of distribution than any other section of the country. It must have its coal hauled in. Most of the raw products which are manufactured come from other sections. It must distribute its manufactured products all over the United States as well as overseas, and actually needs additional facilities of transportation.

Mr. DAVIS. By both rail and water?

Mr. SMALL. By both rail and water, but as a practical question, the additional facilities would sooner come through the improvement and added use of its harbors and interior waterways. The old idea apparently was that the great system of railroads dominated by the New York, New Haven & Hartford was sufficient for all its needs. But surely no one at this day can believe that the railroads are sufficient. In addition its industries need power and it has, on one of its rivers, the Connecticut, a favorable report for the improvement of that river both for navigation and the development of hydroelectric energy, and this favorable report has been before Congress for some years, and yet Congress has never adopted the project. The development of that river would not only make it navigable to Springfield and make available the traffic on that river for coal as well as outgoing products, but it would develop 30,000 horsepower, which would be a large contribution to the industrial needs of the section.

Mr. DEMPSEY. And do away with the importation of that amount of coal.

Mr. SMALL. And relieve the section of the necessity of importing the amount of coal necessary to develop that horsepower. I believe that as compared with other sections of the country there is a more pressing need for the development of the harbors, and particularly the interior waterways which penetrate New England, than in any other section of the country.

Mr. DEMPSEY. Yes; and at the present time there is this added aspect: We seem to have added rather permanently if not entirely to our freight rates, making a substantial increase in the cost of the articles which are transported, and the only hope for reasonably cheap transportation in the future is with the waterways.

Mr. SMALL. I would like to add this, that these remarks are not intended in any way to carry any implication of criticism of the Representatives in Congress from New England, but are directed solely to the people of New England, because I have always found its Representatives ready and willing to serve their constituencies in any possible way.

Mr. ROGERS. Mr. Small, I want to thank you for the expression that you have just voiced, and to concur absolutely in what you have said, especially in your reference to the attitude of New England. The lack of achievement here in Washington by the Representatives of New England in respect to certain projects has in my judgment



arisen from the lack of cooperation and impetus from the New England people themselves, who ought to be vitally interested and concerned. You are entirely correct.

## STAMFORD HARBOR, CONN.

Mr. DEMPSEY. The next harbor is Stamford, Conn., page 219. I see that \$132,000 is asked for further improvements, General, and that that is the amount estimated to complete the project, and I see that you had on hand there \$194,000, as of the date of this report, July 1, 1920. How much have you on hand now, as a matter of fact?

Gen. TAYLOR. We had on hand on the 1st of December outstanding contracts amounting to \$103,629, and available \$89,760, so that the total amount of money on hand was practically the same as on the 1st of July, but since that time we have entered into contracts covering over \$100,000 of the money.

Mr. DEMPSEY. But the work under the contracts has not been done?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. So it is future work. It is practically the same?

Gen. TAYLOR. Practically the same; yes, sir. The outstanding contracts \$103,000 and the balance of the amount available is \$89,760. Stamford Harbor has two main branches.

Mr. DEMPSEY. What do you mean by two main branches—when you get inside?

Gen. TAYLOR. When you get inside. They have an east branch and a west branch. They are both very narrow.

Mr. MERRITT. The manufacturing district is on a point which extends right out into the harbor.

Gen. TAYLOR. Both of those branches are very narrow, and the depth is not sufficient for the business that actually comes there. In addition to that, they are full of rock, both sides of the harbor are rocky, and that makes navigation very difficult and dangerous.

Mr. DEMPSEY. Now, I see your project provides for an entrance channel 12 feet deep and 200 feet wide, about 0.6 mile long; a channel in the east branch 12 feet deep and 100 feet wide, with increased width at the turns, to a point 1,100 feet from the head of navigation. The other channel is to be 9 feet deep and 100 feet wide. That was adopted in 1919?

Gen. TAYLOR. Yes, sir.

Mr. MERRITT. You understand, Mr. Chairman, that—I suppose it is the same in all ports, but it is especially true in the Sound now—that the expense is so great in the way of tows and everything that they want to get in as deep barges as they can, to keep down the labor overhead, and the freight charges at present—the men who handle goods in Stamford tell me that the freight charges are tremendous. They have to load a barge about two-thirds full, but they have to pay the same as if it was full. That makes the per ton cost of lumber and coal or other bulk freight very high.

Mr. DEMPSEY. So far as this committee is concerned, we have absolutely no jurisdiction except over the project depth.

Mr. MERRITT. I understand. Those projects are not completed and they are very important.

Mr. DAVIS. Is this amount of \$132,000 the estimated cost of the entire completion?

Mr. DEMPSEY. Yes. Now, Mr. Merritt, while what you have said is true, is it not something that has been true—I see by the Associated Press dispatches of the last few days that both tonnage and rates have fallen off tremendously, that every transatlantic line is tied up, all of these other boats, that is within two or three weeks.

Mr. MERRITT. That is true, but I do not think the same conditions surround barge transportation.

Mr. DEMPSEY. I was wondering whether it did.

Mr. MERRITT. When I was home at Christmas time the same complaint came to me, particularly in the handling of coal.

Mr. DEMPSEY. What they said in the article, as I read it, was that there had been such a large increase of tonnage during the war in all of the great marine nations that there absolutely was not the traffic.

Mr. MERRITT. That is true, but we are not dealing with that.

Mr. DEMPSEY. Do you know anything about that, Gen. Taylor?

Gen. TAYLOR. I do not think that would apply to this.

Mr. DEMPSEY. Do you know the conditions about barge traffic? Has there been a larger number of barges built as well as other boats?

Gen. TAYLOR. Not as far as I know.

Mr. MERRITT. I think the construction of barges ceased during the war, because every ship mechanic was put into the ocean stuff.

Gen. TAYLOR. The only concern that I know of that attempted to build any new barges was the waterway section of the Railroad Administration. They started to build barges for the New York Barge Canal and the Mississippi River section. But other than that I know of nobody that has attempted to build any barges in the last two or three years. I think to-day the situation so far as barges is concerned is worse than three years ago. I am satisfied of that.

Mr. ROGERS. The effective depth of this channel is 12½ feet?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. One channel, the entrance of the east channel.

Mr. SMALL. The project for the west channel is 9 feet.

Mr. DEMPSEY. Yes.

Mr. ROGERS. What is the available depth now?

Gen. TAYLOR. It is 9 feet in the east channel and 7 feet in the west.

Mr. DEMPSEY. Where did you get that?

Gen. TAYLOR. In the paragraph "Condition at the end of the fiscal year," near the bottom of page 220.

Mr. ROGERS. Is a 9-foot barge a commercially feasible thing?

Gen. TAYLOR. On the Sound they use a great many of the small old type of barge canal boats which draw about 12 feet, so that if this is deepened to the depth of the present project, they will have to use the tide in order to get in. That condition exists to-day because they come in with the tide, and they can not load even the small barges to full capacity.

Mr. ROGERS. But an ocean-going barge in these days draws about 18 feet, does it not?

Gen. TAYLOR. Yes, sir; nearer 20 feet. About 20 feet.

Mr. SMALL. I think it is true that the present tendency for the average type of barge being constructed and to be constructed for use on the interior waterways, including the Sound, is to accommo-

date a depth of 12 feet, the barge having an approximate draft of 10 feet.

Gen. TAYLOR. There are a great many barges of that kind.

Mr. SMALL. That is because the standard depth of the Erie Canal is 12 feet, and also several projects which have been adopted on the intercoastal waterway.

Gen. TAYLOR. Yes; 12 feet is the depth which most of the small harbors have in New England, because the Erie Canal barges had that depth, and they ought to be able to enter those harbors.

Mr. SMALL. That is the project depth of the Chesapeake & Delaware Canal?

Gen. TAYLOR. Yes. I am very well satisfied that a commercially possible barge can be operated on a depth of 12 feet.

Mr. DEMPSEY. I take it, Gen. Taylor, by looking at your comparative statement on page 222, that the traffic has declined steadily and considerably from 1915 to 1919, in tonnage.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now perhaps you or Mr. Merritt can tell us something about that. We will be asked some questions about it.

Gen. TAYLOR. That was due last year entirely to decrease in receipts of coal, the same decline in every one of the New England ports. They did not have the coal.

Mr. MERRITT. The coal we did get we got in by railroad. If it got into the port of New York it did not get out at all.

Gen. TAYLOR. You will notice that every harbor in New England shows a falling off in the item of coal. The coal was not there, and what there was was by rail.

Mr. DEMPSEY. Your detailed statistics do not show that.

Gen. TAYLOR. That is in part 3.

Mr. DEMPSEY. What page?

Gen. TAYLOR. Page 3397.

Mr. MERRITT. I think it must be true also in regard to lumber.

Gen. TAYLOR. Lumber shipment has undoubtedly decreased. The east branch of Stamford Harbor has been very largely used by the lumber business, and there has probably been a great falling off on that the last year.

Mr. MERRITT. They used to get in lumber by schooners, but there have been no schooners during the war. Building material fell off.

Mr. DEMPSEY. Now, let us see. Coal was 73,000 tons on one branch and 41,000 on the other. Have we anything to show the amount of coal in previous years? It does not show the details except for the current year?

Gen. TAYLOR. No, sir. The previous year's total amount is shown on page 3297, comparative statement, but the detailed figures are only given for the current fiscal year.

Mr. DEMPSEY. But you are familiar enough with the matter to know that the two items of lumber and coal have fallen off?

Gen. TAYLOR. Yes, sir. That is shown very markedly in every harbor that we have considered so far, the falling off in coal receipts last year. That was due to a condition which we hope will not exist next year.

Mr. DEMPSEY. Have you anything on which to base the belief that the traffic in this harbor will increase with the granting of this amount?

Gen. TAYLOR. Yes, sir. It is a very rapidly growing manufacturing place, and the demand for coal and for the products which go into manufacture is bound to increase.

Mr. DEMPSEY. What do you say about that, Mr. Merritt?

Mr. MERRITT. I think there is no question about that.

Mr. DEMPSEY. How much of a place is Stamford?

Mr. MERRITT. Something over 40,000.

Mr. DEMPSEY. Of course, it is largely a residential place?

Mr. MERRITT. No. The growth of manufacturing has been very great. On the borders of this east branch are factories that when running full employ 7,000 or 8,000 people. One factory that I know of had over 5,000 the last year. Of course, the supplies for that in the way of coal and iron and everything are heavy, and bound to increase. Of course, during the past two or three years, Mr. Chairman, you remember building operations have practically ceased, so that cement and all that sort of stuff have fallen off, and what they got there they had to get by rail.

Gen. TAYLOR. They were lucky that they could get cement in any way.

Mr. DEMPSEY. I notice, General, on comparing the detailed statistics for 1918 with 1919 that the coal on the east branch was 73,000-odd tons last year, and the year before was 110,000, and on the west branch the coal last year was 41,000, while the year before it was 54,000.

Gen. TAYLOR. That shows the falling off. I was satisfied that that was the case.

Mr. DEMPSEY. Well, now, is Greenwich in your district?

Mr. MERRITT. Right next to Stamford.

Mr. DEMPSEY. There is nothing else about Stamford before we leave that?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. There is nothing else that you want to say about that?

Mr. MERRITT. Nothing else. It is just a type of town which is growing internally from its own manufactures and for other reasons, partly because it is on the way to New York. There is a constant overflow from New York.

Mr. DEMPSEY. But the overflow from New York would not use coal except as they used it for heating purposes, and that would not increase your transportation.

Mr. MERRITT. It will cause increased building, because of increased population, lumber, and the necessary supplies.

#### GREENWICH HARBOR, CONN.

Mr. DEMPSEY. I see, Gen. Taylor, page 224, that the amount of transportation in Greenwich was 80,000 tons last year, as against 77,000 in 1918, and then it runs up higher in 1917 to 112,000, and in 1916 it is 139,000, and in 1915 it is 96,000. It is a fair-sized harbor?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The additional project is for a channel 12 feet deep for little over a mile, and 130 feet wide in the outer harbor, and 100 feet along the water front. The project is about completed and this \$14,000 it is estimated would complete it.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The new work is simply the completion of the widening of the channel of the outer harbor, bottom page 223, under the paragraph "conditions at the end of the fiscal year."

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What is your width at the outer harbor?

Gen. TAYLOR. 110 feet.

Mr. DEMPSEY. And you want to widen that to what?

Gen. TAYLOR. 130.

Mr. DEMPSEY. Now if it comes down to the question of selection that is not so immediately important, is it?

Gen. TAYLOR. I would say that that is not as important as Stamford Harbor, because they can get along with the present width.

Mr. DEMPSEY. You have got the depth?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. It is just a question of increasing the width?

Gen. TAYLOR. Just a question of increasing the width and making the navigation easier.

Mr. DEMPSEY. There is not any doubt about the fact that the harbor is a commercial harbor, and an important harbor, and a harbor that will grow, but it is just a question of whether we can afford to spend the money for this project at this particular time.

Mr. DAVIS. In preference to some other project that perhaps is needed more.

#### NEW YORK HARBOR.

Mr. DEMPSEY. The next item is New York Harbor, page 270. Your first estimate is maintenance, including Ambrose Channel, Gedney and the main ship channel. Ambrose Channel is the main entrance to New York Harbor?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is simply a maintenance program?

Gen. TAYLOR. That is all.

Mr. DEMPSEY. I do not see as there is any necessity of discussing that item, Mr. Small?

Mr. SMALL. I do not. The channel must be maintained. It is only a question of whether it can be reduced any from \$250,000.

Gen. TAYLOR. No, sir; it can not.

#### AMBROSE CHANNEL, CRAVEN SHOALS, AND ANCHORAGE CHANNEL.

Mr. DEMPSEY. The next item is Ambrose Channel, Craven Shoals, and Anchorage Channel, \$300,000.

Gen. TAYLOR. The Ambrose Channel proper, which is the channel leading from the ocean up to opposite Gravesend Bay, is completed. This project, however, includes not only Ambrose Channel proper, which was all that was included in the original project, but it has been extended so as to include certain dredging opposite Tompkinsville. It includes the shoal lying between the main channel and the

Bay Ridge Channel; that is, it takes a slice off the west edge of the shoal, widening the channel to the eastward. As it is now, there is a very narrow channel between the anchorage and the shoal. It is not at all an infrequent occurrence for boats to go aground there, and we have had one or two wrecks and accidents from vessels grounding, and it is necessary to widen the channel at that point. That is what the money is for. It reads for Craven Shoals also, but that is practically completed at this time, so it will go into the widening of the channel at this point.

Mr. DEMPSEY. In order that it will appear on the record, Ambrose Channel starts outside of New York Harbor?

Gen. TAYLOR. Yes; in deep water of the Atlantic Ocean.

Mr. DEMPSEY. And runs northerly until it reaches a point between Staten Island on the west and—what do you call that line?

Gen. TAYLOR. It is Gravesend Bay, near Coney Island.

Mr. DEMPSEY. And the Coney Island district on the east. It then proceeds directly northward in the general direction of Governors Island?

Gen. TAYLOR. Yes, sir; through the Narrows, and into the upper harbor.

Mr. DEMPSEY. When you reach a point east of Tompkinsville, and to the northward, there is a very narrow deep channel?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And an extensive shoal toward the east shore?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. On account of the narrowness of the channel as I understand you, with the vast amount of shipping in both directions, the vessels have to proceed very near to the anchorage point and that makes it dangerous?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And you propose to cut away part of that shoal and to thus increase the navigable width of the channel, and do away in a large measure with the congestion, and pretty nearly wholly with the danger?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, that is the purpose of that?

Gen. TAYLOR. It is; yes, sir.

Mr. DEMPSEY. And the sole question involved is whether the amount in the appropriation could be reduced somewhat on account of the fact that you may get lower rates?

Gen. TAYLOR. We are doing all of that work with our own sea-going hopper dredges, and funds have reached such a stage that they will all practically be exhausted on the 1st of March, and if we do not have more funds appropriated we will have to lay our dredges up.

Mr. DEMPSEY. That is as important as any work in the whole country?

Gen. TAYLOR. I know of nothing more important than that.

Mr. DEMPSEY. Because it affects all the ocean-going traffic to foreign lands and all coastwise traffic?

Gen. TAYLOR. Everything that comes into the southern entrance of New York Harbor passes that point—all of it that enters through the Narrows.

Mr. DEMPSEY. And you think that you really need that amount during the life of this bill?

Gen. TAYLOR. Yes, sir; I am sure of it.

Mr. DEMPSEY. And that amount would be spent during that time?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Could that amount for dredging Craven Shoal be safely reduced?

Gen. TAYLOR. No, sir.

CHANNEL BETWEEN STATEN ISLAND AND HOFFMAN AND SWINBURNE ISLANDS.

Mr. DEMPSEY. Another item in the same groups is \$50,000 for a channel between Staten Island and Swinburne Island.

Gen. TAYLOR. That can be omitted. The channel comes down to the west of Swinburne Island and comes close to these islands so as to give navigation facilities. We have the channels completed down to the end. We got more favorable prices than we anticipated, so that the money we have will complete the channels as far as necessary at this time, so that we need no further appropriation now.

Mr. DEMPSEY. We can omit that?

Gen. TAYLOR. Yes, sir. It was one case where we got the work done for much less than we had estimated. That was due to the fact that the contractor put in a different kind of dredge than we had estimated for, and he was able to do the work cheaper.

BAY RIDGE AND RED HOOK CHANNELS.

Mr. DEMPSEY. The next item is \$150,000 for Bay Ridge and Red Hook Channels.

Gen. TAYLOR. That is along the South Brooklyn water front. The Army terminal lies right in here. The Bush Terminal is also along there.

Mr. DEMPSEY. The Bush Terminal, by the way, is the largest terminal in the world, is it not?

Gen. TAYLOR. I think it is; I am not sure.

Mr. DEMPSEY. It is a very large terminal?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And a new one?

Gen. TAYLOR. Yes. The Army terminal, which is close to the Bush terminal, is, of course, another very large terminal.

Mr. DEMPSEY. That also is new?

Gen. TAYLOR. That also is new.

Mr. DEMPSEY. Is the word "terminal" as used in connection with those two improvements used to embrace both anchorage and buildings to receive and to house supplies of all kinds?

Gen. TAYLOR. It embraces the wharves, no anchorages. Wharves and docks, buildings to house the supplies, and the Bush Terminal has large factories connected with it, so that it is a complete establishment in itself. The raw material comes in and goes out as manufactured material, out of the same building, practically.

Mr. DEMPSEY. By the way, could you tell us, roughly, General, what the cost has been of the Army terminal? Was that the one that Gen. Goethals had charge of?

Gen. TAYLOR. Some \$75,000,000.

Mr. DEMPSEY. General, for what purpose is the Army terminal used now?

Gen. TAYLOR. I am not certain for what purpose it is used. It will undoubtedly be used as an Army terminal and probably as a commercial terminal. It is much larger than the Army needs in time of peace.

Mr. DEMPSEY. But it will probably be rented or leased for commercial and civil purposes?

Gen. TAYLOR. Undoubtedly.

Mr. DEMPSEY. Do you know anything about what the Bush Terminal cost?

Gen. TAYLOR. I have no idea. It runs into millions of dollars.

Mr. DEMPSEY. That is a much larger terminal than the Army terminal, is it not?

Gen. TAYLOR. I think the total Bush Terminal is larger than the Army terminal. In fact, I am quite certain of it. Of course, that was built when prices were low. The Army terminal was built during the rush of war and at a high unit cost.

Mr. DEMPSEY. The Bush Terminal, as well as the Army terminal, are creations of a comparatively few years ago?

Gen. TAYLOR. Quite so.

Mr. DEMPSEY. And it is particularly for the purpose of utilizing these two terminals that this item is necessary?

Gen. TAYLOR. Yes, sir. And in addition to those the city has also built some new, large wharves, one over 1,400 feet, the longest wharf in New York City. The longest wharf in New York City is located on this channel, and there are several other wharves of a thousand feet located there. That is a large industrial and manufacturing center. There is a large business of big ships that comes in there. The work on this channel is therefore necessary in connection with that shipping.

Mr. DEMPSEY. Page 282. You propose to restore Bay Ridge Channel to a depth of 40 feet by removing shoals from the upper end. That is one thing.

Gen. TAYLOR. That is one thing; yes, sir.

Mr. DEMPSEY. And the other thing is to make Red Hook Channel deep enough for vessels of deep draft?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And you have delayed doing this work because you have not had the dredges, which are now available, as I see on page 282?

Gen. TAYLOR. Yes; and as it also states on page 281 that "the upper end of Bay Ridge Channel, near where it meets the 26-foot Gowanus Creek project, has shoaled to about 30 feet depth. To complete the project there remains the further deepening of Red Hook Channel to 40 feet at mean low water for its entire width of 1,200 feet."

The further important work is widening the Red Hook Channel—that is, the upper end of the channel, where it connects with the Buttermilk Channel, just south of Governors Island. Bay Ridge is along the South Brooklyn water front, and the Bay Ridge Channel is the one connecting Bay Ridge with Buttermilk Channel—that is, the channel between Governors Island and Brooklyn.



Mr. SMALL. What is the available depth of the Buttermilk Channel now?

Gen. TAYLOR. It is a little less than 30 feet. There is one sounding of 29 feet, but it is just about 30 feet.

Mr. SMALL. May I ask if this estimate for Bay Ridge and Red Hook Channel of \$150,000 may safely be reduced?

Gen. TAYLOR. No, sir.

EAST RIVER AND HELL GATE, N. Y.

Mr. DEMPSEY. That takes us along to the next page, page 7, and the next item is \$4,200,000 for the further improvement of East River and Hell Gate.

Mr. SMALL. What was the amount available for that on December 1?

Gen. TAYLOR. The amount available over outstanding contracts and liabilities was \$2,387,304, and we have outstanding liabilities and contracts of \$3,158,168.

Mr. SMALL. The amount available, then, outside of outstanding liabilities and contracts has been reduced very little since July 1?

Gen. TAYLOR. Yes, sir. We have made no new contracts since then, and what expenditures there have been have been on contracts previously entered into.

Mr. DEMPSEY. I thought you said the amount on hand was something over \$2,000,000 and your outstanding liabilities over \$3,000,000?

Gen. TAYLOR. We have \$2,387,304. That is over and above all liabilities. Then, we have liabilities of \$3,158,168.

Mr. SMALL. May I ask this question: In view of the fact that it will require a number of years to complete these projects at East River and Hell Gate, and the annual appropriation being for continuing work to the project, what is the least amount which might be appropriated without unduly hampering the progress of the work?

Gen. TAYLOR. I think that the amount which should be appropriated, the least amount, should be an amount which will enable us to do the work in a reasonable period of time. The last estimates which were made—which were carefully made, and which were completed only within the last week—show that the cost of this 40-foot project will be \$72,000,000 in addition to the amounts that have been previously appropriated. At the rate of \$4,000,000 a year that would take us 18 years to finish. Now, the project is not one on which we could use advantageously a large sum one year and then wait two or three years for more money, for the reason that only a certain number of plants can be used on the East River on account of the enormously congested traffic conditions. For instance, where the work is done at Hell Gate we can use only one plant at a time. If you put more in you would block the channel or cause such serious obstruction to navigation as to be of very great interference. We can work advantageously at the rate of \$4,000,000 a year, and if the project is to be continued the money should be appropriated at that rate.

Mr. DEMPSEY. I see on both shores of the East River, from the Battery, Manhattan Borough, to Port Morris, east of Hell Gate, 12

miles are occupied by docks, except a very limited section, 30 per cent of which are owned by the city.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And as I understand you gentlemen, the number of terminals and the number of industries have increased very greatly since you have been doing this work.

Gen. TAYLOR. Oh, yes; and the terminals are extending eastward. It is going to be only a relatively short time before the terminals will extend up the East River into Flushing Bay. There will be development as far as Flushing Bay.

Mr. DEMPSEY. Now, how far does this work really go? Where do you begin on that work and how far does it go?

Gen. TAYLOR. It begins at Governors Island, right in there [indicating] on what is known as the Diamond Reef, between Governors Island and the Battery.

Mr. DEMPSEY. Where is the Battery?

Gen. TAYLOR. At the south point of Manhattan Island. The work extends in spots all over the East River, with the bulk of the work being centered at Hell Gate and the immediate vicinity, and extends through in other places around Brother Island a short distance east up to Throgs Neck, which is really the entrance to Long Island Sound.

Mr. DEMPSEY. Throgs Neck is in Connecticut?

Gen. TAYLOR. No; in New York. The Connecticut line comes in just east of that.

Gen. DEMPSEY. Do you have to do any work of importance on this Hell Gate project beyond Flushing Bay?

Gen. TAYLOR. There is one shallow spot east of there, but that is soft digging. There is no rock.

Mr. DEMPSEY. Now, as a matter of fact this work starting at the Battery and going through Hell Gate, from Manhattan up to Hell Gate, is all right close to the thickly settled part of Manhattan Island, is it not?

Gen. TAYLOR. Yes, sir. Hell Gate, for instance, is at Ninety-second Street.

Mr. DEMPSEY. It runs from the Battery to Ninety-second Street?

Gen. TAYLOR. Yes, sir; and beyond.

Mr. DEMPSEY. And there is nothing else about New York that brings traffic except the Hudson that is close to Manhattan, is there?

Gen. TAYLOR. No, sir. The East River is on the east side of Manhattan and the Hudson on the west side of Manhattan.

Mr. DEMPSEY. And this [indicating] is the East River?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Hell Gate is practically at the end of it there?

Gen. TAYLOR. Yes; at the end of it. That is the point where the tides meet, the tides coming in from Long Island Sound and up through the Narrows meet in the vicinity of Hell Gate sometimes, depending on the wind or something else, meet a few miles one way or another, but meet near Hell Gate.

Mr. DEMPSEY. Most of your work is in the vicinity of Hell Gate?

Gen. TAYLOR. We have two or three contracts in that vicinity. We have a contract on Diamond Reef, Coenties Reef, which is close to the Battery, and quite a large contract for rock excavation opposite New-

town Creek, all in that vicinity. Then also we have two contracts for work on Shell Reef, which extends from about Thirty-second Street south. So the work is distributed at the present time all the way from Governors Island to the east of Hell Gate.

Mr. DEMPSEY. What part of the distance from Governors Island to Hell Gate have you a 40-foot depth? What part of the distance is 40 feet?

Gen. TAYLOR. In spots there are 40 feet all the way. There are shoals all the way. So that 40 feet is not available, except as we make it, anywhere from Governors Island to east of Hell Gate. There are deep spots where the water is deeper than 40 feet. Then there are shallows. There is no through channel 40 feet deep.

Mr. DEMPSEY. Is this amount of money to complete this project to be spent between the Battery and Hell Gate, practically all of it between those two points?

Gen. TAYLOR. I can give you it in some detail if you would like to have it.

Mr. DEMPSEY. No; I would like it better in general terms.

Gen. TAYLOR. There will be some \$18,000,000 that will be necessary for the work east of Hell Gate. The balance of it is in Hell Gate and west of it, the principal part being, as I stated, Hell Gate, where it will cost between \$24,000,000 and \$25,000,000 to get 40 feet through Hell Gate.

Mr. DEMPSEY. What is the distance from the Battery to Hell Gate?

Gen. TAYLOR. Approximately 7 miles.

Mr. DEMPSEY. Is there anything more that you think should be said on this question of this proposed appropriation for Hell Gate?

Gen. TAYLOR. I do not know of anything unless I might give the reason why you need so much money in addition to the fact that you need sufficient money to complete the work within any reasonable period of years, and that is the fact that it requires a very large and expensive plant in order to do this work. It is rock excavation in water ranging from 45 to 50 feet in depth, that is, at high tide, 40 feet at low water, so that one must be prepared to excavate pretty close to 50 feet. That requires a very large and expensive plant, and in order that a contractor may find it possible to put such a plant on this work it is necessary to award the work in large contracts. We have, for instance, at the present time a number of contracts. We have one with the New Jersey Shipbuilding and Dredging Co., amounting to very close to \$1,000,000. We have one with the Arundel Corporation amounting to \$1,700,000. We have one with the Breyman Co., between \$500,000 and \$600,000; one with the Bowers Southern Dredging Co. for nearly \$600,000; another one with the Breyman Co. on Shell Reef. That is for a different kind of dredging, where the work is not so extensive, amounting to \$28,000. We are building for the work on this project a Government plant, a dredge for which the contract is \$606,000. That is for the dredge alone. That does not include the drill scow, which will be necessary to go with it in order to drill the rock, and the necessary dump scows and things of that kind. So, that you can see one unit of equipment will cost well over \$1,000,000. The result is that there are relatively few plants that are available for this work, and it requires, as I said, a large contract to make it profitable to move one of those plants onto the work at all.

Mr. DEMPSEY. Well, do you contemplate letting contracts to other bidders than those with which you have contracts?

Gen. TAYLOR. We do. We have done the best we could to induce other people to come into that river and do work, and in fact the Arundel Corporation, which has a contract now, is a new concern in that harbor. They have done work around Philadelphia and Baltimore Harbors, but they have never been in New York Harbor until the last year. It was only at our urgent solicitation that they came up and competed for the work in New York Harbor. They were the lowest bidders on the work which we induced them to compete for, and we hope to induce others to come in. I do not know whether we will succeed in doing it or not.

Mr. DEMPSEY. Mr. Small, have you any suggestions?

Mr. SMALL. I think not.

#### NEWTOWN CREEK.

Mr. DEMPSEY. Newtown Creek, \$100,000 for further improvements, page 297. This has a traffic of—

Gen. TAYLOR. Four million seven hundred thousand tons.

Mr. DEMPSEY. Of the value of \$211,000,000. Where is Newtown Creek? It runs into East River?

Gen. TAYLOR. Just a short distance above the navy yard.

Mr. DEMPSEY. Where does it originate?

Gen. TAYLOR. It is just a short stream.

Mr. SMALL. It has those large petroleum refineries on it.

Mr. DEMPSEY. Where does the water come from?

Gen. TAYLOR. It is tidal. It comes from the East River; that is all. In earlier years there was a little creek. But practically no water comes in there now except tide water.

Mr. DEMPSEY. I see that it has been dredged 18 feet deep, 125 feet wide. It has shoaled?

Gen. TAYLOR. Yes, sir; it has shoaled.

Mr. DEMPSEY. For the upper section it is from about 14 to 15 feet. What you propose to do is to—

Gen. TAYLOR. Deepen it to 20 feet and increase the width and provide a turning basin. There is no means of turning a vessel. They have to back out.

Mr. DEMPSEY. That is one of the improvement items and it is of immediate and pressing use?

Gen. TAYLOR. It is; yes, sir.

Mr. SMALL. You think that appropriation of \$100,000 for Newtown Creek is essential?

Gen. TAYLOR. I think so; yes, sir.

Mr. DEMPSEY. What is the amount available now?

Gen. TAYLOR. \$225,000. We have tried two or three times to let contracts for that work, but we have been unable to obtain any contracts at reasonable rates. But I hope the next year conditions will be different and we will be able to get the work done. I might say that before the war we estimated that dredging in that section at about 25 cents a yard. It now costs more than that to tow a yard of material to sea after it is in the dump scows. Towage alone costs more than that.

## HUDSON RIVER CHANNEL, NEW YORK HARBOR.

Mr. DEMPSEY. The next item is Hudson River Channel, New York Harbor.

Gen. TAYLOR. Those are the channels along the Weehawken and Edgewater fronts.

Mr. DEMPSEY. That is the place where you said the channel is now?

Gen. TAYLOR. Yes, sir; we are widening the channel there.

Mr. SMALL. I would say, Mr. Chairman, that representations have been made to you by representatives of the large shipping interests which have built and are still building large terminals there, setting forth the very urgent necessity of widening this channel, and at the time their representative was here you happened not to be available that day, nor was Mr. Kennedy available, but I asked them to write you.

Mr. DEMPSEY. I have received their letter. As a matter of fact, you referred to its importance when you were pointing it out on the map there.

Gen. TAYLOR. Yes, sir. There are several very important parts to this work: One is the widening of the channel down opposite Canal Street. The deep channel lies next to the New York shore, and forces the deep-draft traffic close to these piers, which makes it a dangerous condition if a vessel is backing out, and there is a tremendous traffic and a very serious interference with vessels going up the stream. There is not room, really, to pass. The other parts of the channel, along the Edgewater and Weehawken fronts, are also very much used.

Mr. SMALL. This gross estimate, General, of \$750,000 is divided into three parts, of which \$300,000 is for dredging along the Manhattan water front, \$440,000 for widening the channel along the Weehawken and Edgewater fronts, and \$10,000 for the removal of rock off Pier A, making a total of \$750,000. Which of those do you regard as more essential than the others, if you can tell?

Gen. TAYLOR. I think that Mr. Hawley's story about his children is very apt. He said that if he had to buy three pairs of shoes for seven children he would not know for which ones to buy. It is the same way here.

Mr. SMALL. They are all very important?

Gen. TAYLOR. All very important.

Mr. SMALL. And should be done as early—

Gen. TAYLOR. Just as early as we can do them; yes, sir.

Mr. SMALL. That was the way I was impressed, desiring to reach an intelligent conclusion about it after these gentlemen came.

## BURLINGTON HARBOR, VT.

Mr. DEMPSEY. The next item is Burlington Harbor, \$100,000 for maintenance.

Mr. SMALL. Perhaps the chairman will permit me to ask a question with a view to progress. Do you regard that appropriation of \$100,000 for Burlington Harbor as essential at this time, and if not essential, will you kindly give the reasons?

Gen. TAYLOR. I think that that can be deferred for a short time, but it should not be deferred many years. The Burlington Harbor, which lies on the east side of Lake Champlain, is protected by a breakwater which was built many years ago. The breakwater is of wooden-crib construction and during the years since it has been built it has deteriorated to a great extent and the waves are tearing it to pieces, and it has reached a condition where repairs should be made at a comparatively near date, but probably for one or two years more no serious damage will result. I think it would be perhaps better not to omit that item entirely but to give a portion of it, say \$20,000 or \$25,000 that will enable us to make the most urgent repairs. If we do not make them in a short time we are likely to lose the whole breakwater. We replace the old timber superstructure with a concrete superstructure which makes it a very permanent construction.

Mr. DEMPSEY. You will notice that this breakwater was provided for, the first 1,000 feet, under the act of July 4, 1836. That is one of the oldest constructions in the United States.

#### NEWARK BAY.

Mr. DEMPSEY. The net is \$20,000 for a 20-foot project up to Newark. That is maintenance?

Gen. TAYLOR. Maintenance.

Mr. DEMPSEY. What have you already done?

Gen. TAYLOR. That is to maintain what we have already finished. The project extends all the way down the river and through the bay, connecting with the Staten Island Sound project. The bay in its natural condition is very shallow, with soft, muddy bottom.

Mr. DEMPSEY. That is Newark Bay?

Gen. TAYLOR. That is Newark Bay. That is a condition that tends to promote rather rapid shoaling.

Mr. DEMPSEY. This is to dredge the shoaling?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Do you regard the \$20,000 appropriation for this project as essential?

Gen. TAYLOR. Yes, sir.

#### WOODBIDGE CREEK, N. J.

Mr. DEMPSEY. The next is Woodbridge Creek, N. J., \$9,000, page 364. It flows into the Sound?

Gen. TAYLOR. Very near Perth Amboy.

Mr. DEMPSEY. I see that traffic there is 95,000 tons, of the value of \$2,000,000. Where does this creek lead to—from where and to where?

Gen. TAYLOR. The project is only about 2 miles long. It is a clay-products manufacturing center, very largely. A lot of tile and terracotta materials of that kind and class are shipped out. There has been nothing spent there for the last five years, since 1916, when there was \$6,835 spent for maintenance.

Mr. SMALL. Do you regard this estimate of \$9,000 as essential at the present time?

Gen. TAYLOR. Yes, sir; I think that should be given.

Mr. DEMPSEY. Is it not a question of whether that creek is not obsolete on the present depth of barge canals?

Gen. TAYLOR. They have a full project depth of 8 feet, and they can work it on the tide.

Mr. DEMPSEY. A tide of 5 feet and a depth of 8 feet?

Gen. TAYLOR. Yes, sir. Commerce of 95,000 tons a year is pretty good commerce when you consider the average cost of maintenance is not more than \$2,000. It is a case of the manufacturing of building materials, which are used in and around New York.

#### RARITAN BAY.

Mr. DEMPSEY. I see that the next item is \$45,000 for maintenance of Raritan Bay.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. In 1919 there were 7,000,000 tons of shipping of a value of \$500,000,000. There are three channels 300 feet wide and 21 feet deep. This simply is for restoring the project depth, as I understand it?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Of course, the traffic has decreased quite heavily since 1915.

Gen. TAYLOR. I think you will find the reason for the decrease last year is in the falling off of the coal shipments. You see, South Amboy is one of the very big coal-shipping points for New York and New England. A large part of the deep-draft barges that go to New England are from South Amboy.

Mr. DEMPSEY. This is on Raritan Bay?

Gen. TAYLOR. And they use these channels. Those barges draw very close to 20 feet.

Mr. DEMPSEY. What do you say as to whether that is essential?

Gen. TAYLOR. I should put it in the essential class.

#### RARITAN RIVER.

Mr. DEMPSEY. The next is Keyport Harbor, N. J.

Gen. TAYLOR. There is another one; Raritan River, \$100,000.

Mr. DEMPSEY. Yes; page 368. Well, that has a good deal smaller traffic, I see.

Gen. TAYLOR. Yes; part of the coal business goes up the river and part of it originates lower down in the section. That is not included in this project.

Mr. DEMPSEY. Well, in view of the fact that that is a comparatively small port, do you not think that that could be deferred, General?

Gen. TAYLOR. Well, you have a commerce of 1,375,000 tons, which is quite a good-sized commerce. I would say that that is less important than the Raritan Bay.

Mr. DEMPSEY. You say, "The controlling depth in the south channel for the lower 1,900 feet is 10 feet; the remainder of the channel has shoaled to about 1.5 feet."

Mr. SMALL. Raritan River intersects quite an active industrial section in New Jersey. The project appears to be only 15 per cent completed. It is only a question of whether it can wait.

Gen. TAYLOR. Notice the statement that five freight steamers operate between New Brunswick and New York, furnishing fast and efficient freight service.

Mr. DEMPSEY. Well, suppose we leave that, Mr. Small, with two ideas, as to class and as to amount.

#### KEYPORT HARBOR, N. J.

Mr. DEMPSEY. Now, the next is \$20,000 at Keyport Harbor, N. J., page 276. That has 44,000 tons.

Gen. TAYLOR. There has been nothing done on that harbor for maintenance since 1916—five years since there has been a thing spent—so that the present condition is the result of that neglect for those five years. You notice that there was considerable shoaling, and the statement is made that the work is not an attractive one to bidders, on account of the difficulty and cost of disposing of the material. In other words, if we do not have a fair-sized amount, enough to induce a contractor to go in there, he will not move his plant in there.

Mr. DEMPSEY. It is 1 mile from Raritan Bay by the steamboat down to Keyport. You see what there is to that, Mr. Small?

Mr. SMALL. Yes.

Mr. DEMPSEY. You would put that in the desirable class, General?

Gen. TAYLOR. I have a little doubt as to whether that should go into the desirable class or the essential.

#### SHOAL HARBOR AND COMPTON CREEK, N. J.

Mr. DEMPSEY. The next is Shoal Harbor and Compton Creek, N. J., page 380. That is a harbor used to about the same extent.

Gen. TAYLOR. That is in almost exactly the same category as the other one.

Mr. DEMPSEY. It would all be used for maintenance—for dredging?

Gen. TAYLOR. Yes, sir.

#### SHREWSBURY RIVER, N. J.

Mr. DEMPSEY. The next item is \$100,000 for Shrewsbury River for improvements, page 383.

Mr. SMALL. May I ask this question of the General?

Mr. DEMPSEY. Yes.

Mr. SMALL. General, do you regard that estimate of \$100,000 for Shrewsbury River, N. J., as absolutely essential at the present time, and if not, why?

Gen. TAYLOR. That project was one which was adopted by the 1919 act, in accordance with the report that was submitted several years prior to that time. Between the time that the report was adopted in 1919 and the present, there have been quite considerable changes in the conditions there. The report in the project document, for instance, shows commerce aggregating over 1,000,000 tons a year. The present report shows a commerce of 66,000 tons, which is only a small fraction of the commerce that existed previously. It is a pretty expensive project for the amount of commerce that now exists. There



are changes in boating conditions, other changes in conditions which have occurred, and it hardly seems to me that the expenditure is justified at the present time, based on the amount of commerce there. That is the way I feel about it.

Mr. DEMPSEY. You think, taking it all in all, under the present financial conditions, that that might be deferred to some future time?

Gen. TAYLOR. Yes, sir.

JANUARY 10, 1921.

Mr. DEMPSEY. We start with the Philadelphia district, do we not?

BEVERLY HARBOR, MASS.

Mr. LUFKIN. I simply wanted to say this on the Beverly Harbor project, which Mr. Small remembers very distinctly. That project was adopted some years ago. It was subsequently sent back for a modified report. That report, Gen. Taylor informs me, will probably be available to be sent in here the middle or latter part of this week, and I want to ask you gentlemen, when it comes in, if you will be willing to revert back to that project?

Mr. DEMPSEY. The only question is whether we have any jurisdiction or not. You see that involves legislation. We would not have any jurisdiction and it would go to the other committee.

Mr. LUFKIN. It involves only legislation to the extent of a reduction in the cost to the Government.

Gen. TAYLOR. It is a modification of the project. The project was adopted subject to certain conditions, and it has been found impracticable for the locality to meet those conditions. It has been returned recommending other conditions, which are satisfactory to the locality, and it will result in a reduction of cost to the United States.

Mr. DEMPSEY. Would not that require legislation?

Mr. LUFKIN. This is what happened: As you remember, the original project provided that the city of Beverly should construct a bulkhead. When the time came the city found that they could not get the land where this bulkhead was to be constructed. So the matter was sent back to the district engineer, and he recommended a modified form by which the city of Beverly, instead of constructing the bulkhead, should contribute \$25,000 in cash to the Government toward the general improvement, and in addition the district engineer reported back that two local commercial concerns there should likewise make a contribution; that is, they should help out in this improvement.

Mr. DEMPSEY. And specified the amounts?

Mr. LUFKIN. Yes; so that really this modified project will cost the Government \$50,000 less. That is about the story.

Mr. SMALL. This is the legislative situation—I think Mr. Dempsey is right—that this Subcommittee on Appropriations would have no jurisdiction, because a modification of the project is legislation, and that rests with the Rivers and Harbors Committee. That committee has not begun to hold sessions yet. I suggest that you talk with Mr. Kennedy.

Mr. LUFKIN. I have talked with Mr. Kennedy.

Mr. DEMPSEY. What does he say?

Mr. LUFKIN. He said that he did not think, as I remember it, that there would be any river and harbor legislation.

Mr. SMALL. I have not talked with him recently, but I am inclined to think he will change his mind on that, and that there will be a small bill from the Rivers and Harbors Committee, because some general legislation is necessary; and in view of the fact that this is a modification of a project which has already been adopted and will reduce the cost to the United States, a cost for which the United States is already liable. I believe on presentation of those views that Mr. Kennedy will agree to include that in the bill, if they have a bill. That is my individual opinion. I am a member of the Committee on Rivers and Harbors and I think we will have a bill.

Mr. DEMPSEY. I think so, too.

Mr. LUFKIN. Mr. Small, after that has been done we would have to come back here to this appropriation bill for any action?

Mr. SMALL. Now, Gen. Taylor, will you answer that? I do not think so.

Mr. LUFKIN. Only half of the original amount requested for the project has already been appropriated.

Mr. DEMPSEY. I do not see that you would have to.

Mr. SMALL. What is the state of that, General?

Gen. TAYLOR. \$61,000 of the previous appropriation is still on hand.

Mr. DEMPSEY. But you do not feel at liberty to use it because of the condition in the bill that they should construct a bulkhead?

Mr. DAVIS. Are there sufficient funds?

Gen. TAYLOR. That would not complete the project, but we would have in addition \$50,000 contributed by the State, \$25,000 by the city, and \$25,000 by the local interests.

Mr. DAVIS. That would be as much as you could use?

Gen. TAYLOR. About as much, yes. It is a case where the local interests said exactly what they wanted. They wanted the bulkhead put at a certain place and that was put into the document, but apparently they neglected to find out if they could get the land. They were so sure that they were getting exactly what they wanted that they specified metes and bounds and they had the yacht club objecting to the bay being filled up and being left high and dry. If they had left it in general terms it would have been all right. They got exactly what they wanted and then found they could not use it.

DELAWARE RIVER, N. J., LALOR STREET, TRENTON, TO UPPER RAILROAD BRIDGE.

Mr. DEMPSEY. The next item is Delaware River, N. J., Laylor Street, Trenton, to upper railroad bridge, \$25,000 for maintenance. Now, is that a part of the river on which there is a good deal of business done?

Mr. SMALL. It is just about 1 mile long from Laylor Street, Then-ton, to the upper bridge.

Gen. TAYLOR. The commerce is included in the next item, 2,857,900 tons. There are four projects for the Delaware River, all of which might very advantageously be combined in one project. That is, we have the main project from the sea up to Philadelphia. Then we

have a small project for the Camden water front which is just across the river from Philadelphia. Then we have a project from Philadelphia to the Lalor Street Bridge, Trenton, and one from Lalor Street up to the railroad bridge.

Mr. DAVIS. That is the first project?

Gen. TAYLOR. That is the first project. There is considerable traffic on that section of the river, and the upper section of it is subject to shoaling.

Mr. DEMPSEY. The Delaware River starts then with Delaware Bay?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And runs up to Philadelphia?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Trenton is about 30 miles above Philadelphia?

Gen. TAYLOR. Trenton is above Philadelphia; yes, sir.

Mr. DEMPSEY. Of course, the important part of the commerce is from Delaware Bay to Philadelphia?

Gen. TAYLOR. Yes, sir. That is the large commerce and that is the large project. But there is considerable business above Philadelphia.

Mr. DEMPSEY. From Philadelphia to Trenton?

Gen. TAYLOR. From Philadelphia to Trenton, and particularly along the banks of the river, approximately half way between Philadelphia and Trenton, along at this town of Burlington, and shortly above at Florence and Roebling. At Florence and Roebling there are large iron and wire works, and a great deal of business goes in there.

Mr. DEMPSEY. The project from Philadelphia to Trenton is, I see, practically completed.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You have obtained the project dimensions except for a few isolated shoals, and a small estimate for blasting ledge rock.

Gen. TAYLOR. That is in the northwest corner of the channel, in front of Trenton.

Mr. DEMPSEY. This has really been quite a good-sized project because you have expended \$454,000 on it, I see.

Gen. TAYLOR. That has been on that section of the river. The particular project that we are working on has cost less than that. That is the total expenditure on that section of the river.

Mr. DEMPSEY. You regard this as a real commercial proposition?

Gen. TAYLOR. I do; yes, sir.

Mr. DEMPSEY. Benefiting a large amount of traffic between the two points, Philadelphia and Trenton, and intermediate factories?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And \$25,000 is needed for that?

Gen. TAYLOR. That particular item of \$25,000 is of benefit without any question.

Mr. DEMPSEY. What do you say about that?

Gen. TAYLOR. I would put that in the essential class.

Mr. SMALL. In the last river and harbor bill there were two projects, from Lalor Street up to the bridge and from Allegheny Avenue, and they were consolidated.

Mr. MCGANN. It states in the annual report that they will hereafter be consolidated, the two projects above Philadelphia.

Gen. TAYLOR. So that that \$25,000 would apply all the way.

Mr. DEMPSEY. From Philadelphia to Trenton?

Gen. TAYLOR. Yes, sir.

DELAWARE RIVER, PA., N. J., AND DEL.—PHILADELPHIA, PA., TO THE SEA.

Mr. DEMPSEY. The next item is a large one, I see.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Delaware River, Philadelphia to the sea. What you are asking there is \$2,300,000 for maintenance and \$1,500,000 for improvements?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is practically \$4,000,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, what does maintenance involve as applied to this project, and for which you ask this \$2,300,000?

Gen. TAYLOR. The items for which that is to be expended are given in detail on pages 399 and 400 of the Annual Report of the Chief of Engineers. On page 399 is given in detail the proposed expenditures of the funds that were available the 30th of June last, and on page 400 is given in detail what it is proposed to do with the funds now asked. Last year we had an opportunity to obtain from the Panama Canal a very powerful dredge of a type which we think will be especially adaptable to the work on the Delaware River. It is a dredge that was built for work on the Panama Canal, and which did work during the entire construction of the canal.

Mr. DAVIS. What is the depth there?

Gen. TAYLOR. At Panama?

Mr. DAVIS. The depth of this Delaware River project?

Gen. TAYLOR. Thirty-five feet. We are digging it 35 feet deep.

Mr. SMALL. That is the project?

Gen. TAYLOR. That is the project. We have a depth of 30 feet from Philadelphia to the sea. We have the depth of 35 feet for over 40 miles of the channel. The distance from Philadelphia to deep water in the bay being 63 miles, and of that 63 miles we have 40 miles completed.

Mr. DAVIS. Thirty-five feet deep?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, let us take the items on page 400, continuing improvements by original dredging on Liston Range. Where is Liston Range?

Gen. TAYLOR. The river is divided up into sections of various lengths, and the different sections are known by the ranges on which they run.

Mr. DEMPSEY. Why I am asking that question is because I want to know what depth you have on Liston Range now.

Gen. TAYLOR. We have 30 feet now.

Mr. DEMPSEY. Will you tell us what the draft of the ships was that came into the harbor during the last fiscal year? Tell us where you find it.

Gen. TAYLOR. It is stated in the report that ships drawing as much as 34 feet came in. I do not find in the report anywhere the state-

ments as to the number of vessels of maximum draft that were using the river. The report of the commercial statistics is in a number of ways not as satisfactory as it might be, and we are attempting now to make reports more uniform and to get better data. The collection of commercial statistics is a very difficult operation. We can require, for instance, certain reports from vessels going foreign. They give certain reports at the customhouse. But coastwise vessels are not

Mr. DAVIS. It is not an engineering project on your behalf, anyway; it is economic.

Gen. TAYLOR. Yes; but it is necessary for us to have that information in offering our opinion as to what is necessary on a project.

Mr. DEMPSEY. But there are not any coastwise vessels that draw 30 feet?

Gen. TAYLOR. Yes, sir; there are plenty of coastwise vessels that draw 30 feet.

Mr. DEMPSEY. There are none over that?

Gen. TAYLOR. For instance, the latest modern oil tankers draw 30 feet or a little over.

Mr. DEMPSEY. Now, in this first item you have not anything that shows the number and draft of vessels?

Mr. MCGANN. No.

Mr. DEMPSEY. By continuing improvements by original dredging on Liston Range, you mean by original dredging increasing the present depth, of course?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. So that it is a question of getting, instead of the present 30 feet, the project depth of 35 feet?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, in the next, completing removal of Mameluke rock from Philadelphia Harbor, there, I take it, you have a depth of 30 feet? There is not anywhere that you do not have the depth of 30 feet, and you have 35 feet for about 40 miles?

Gen. TAYLOR. We will have dredged the channel for 40 miles to 35 feet in depth, but certain portions have shoaled, so that all of it is not 35 feet now.

Mr. DEMPSEY. This is a complete removal of Mameluke rock. What do you get by completing that removal? Do you get 35 feet or 30?

Gen. TAYLOR. Thirty-five feet.

Mr. DEMPSEY. Now, have you anything above 30 feet there at the present time?

Gen. TAYLOR. The report does not state, and I can not locate it on the map. It is in the upper portion of Philadelphia Harbor, and my impression is that there is less than 30 feet on that rock, but we have under present contract removed the worst portion of that rock already.

Mr. DEMPSEY. Now, that is in the harbor itself?

Gen. TAYLOR. Yes, sir. That is in the upper portion of the harbor.

Mr. DEMPSEY. Now, what are the present dimensions of the harbor? Have you that here? In other words, are you familiar with the harbor; that is, aside from the exact figures? Are you in a general way familiar with the harbor?

Gen. TAYLOR. Yes, sir; I am.

Mr. DEMPSEY. What do you say as to the size for commercial purposes, taking the harbor as it exists at present? Is it a roomy harbor sufficient to accommodate fairly well the traffic that exists there?

Gen. TAYLOR. It accommodates fairly well the traffic, but it is a very congested harbor, and within the past year particularly there has been a great deal of difficulty in the harbor, due to the fact that vessels coming up to Philadelphia were obliged to anchor frequently on account of their having no vacant wharves for them to go to. Almost every time——

Mr. DEMPSEY. That is a question of shortage of wharves?

Gen. TAYLOR. Every time a vessel anchors in the harbor immediately a complaint is made because it takes up the room, of which there is none to spare. In other words, the Philadelphia Harbor is really nothing but a series of wharves along the Delaware River, which at this point has a width of perhaps 1,500 feet, so that any interference whatever in obstruction in that harbor is a serious matter, and the question has been taken up——

Mr. DEMPSEY. But the thing that you refer to now is not something that is due to the improvement which should be made by the Government, but due to the shortage of wharves, which should be provided by the municipality or the business community?

Gen. TAYLOR. It was due to the large number of vessels coming in. For ordinary conditions the harbor has an ample number of wharves. They are very well taken care of. But the harbor is not a wide harbor in the sense of a harbor. It is merely a lot of wharves along the Delaware River, which at that point, I should say, has a width of some 1,500 feet.

Mr. DEMPSEY. A third of a mile, approximately.

Gen. TAYLOR. Yes, sir.

Mr. SMALL. In order that no injustice may be done the city of Philadelphia regarding its water terminals, I think it is fair to state that the city has been quite progressive in the construction of terminals and has other plans for the construction of additional terminals.

Gen. TAYLOR. Yes; the city of Philadelphia has spent millions in the construction of terminals.

Mr. DEMPSEY. It is due to the physical condition instead of lack of foresight and provision on the part of the municipality?

Gen. TAYLOR. Absolutely, and an abnormal condition that has grown out of trade conditions within the last year.

Mr. SMALL. Before we leave that may I ask the general a question? In the consideration of the last two bills there was some discussion as to consolidating the item for the Delaware River at Camden with the larger item of the Delaware River from Philadelphia to the sea?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. I recall that our late friend and colleague, Mr. Browning, also favored that consolidation. Do you recommend that consolidation?

Gen. TAYLOR. Yes, sir; I do. But that will be another case where probably you will have to have legislation.

Mr. SMALL. I understand.

Mr. DEMPSEY. Gen. Taylor, I see that there is on hand, or was on hand December 1, 1920, to the credit of this project, the Delaware River from Philadelphia to the sea, \$1,020,410.

Gen. TAYLOR. Yes, sir; that was available over and above liabilities and contracts, and there were outstanding liabilities and contracts of \$1,940,902.

Mr. DEMPSEY. So there is actually about \$3,000,000 that has not been spent as yet?

Gen. TAYLOR. Yes, sir; nearly.

Mr. DEMPSEY. Now let us take the next item of this project, the maintenance item, and I see the first item on page 400 is the operation and care of various dredges, boats, pile drivers, and scows, \$750,000. Now that, I take it, is made up of the cost of coal, or fuel such as you may use, the wages of crews, and repairs? In a general way those three items would make up that \$750,000?

Gen. TAYLOR. There is a special item for repairs immediately below that.

Mr. DEMPSEY. Then it would be fuel and wages of the crews almost entirely?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And that was made up as of conditions as to coal and wages in June, 1920?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Do you know anything about what the difference in the cost of fuel is between June, 1920, and to-day?

Gen. TAYLOR. I do not. I know it was very difficult to get coal at all in June, and it is relatively easy at the present time.

Mr. DEMPSEY. Suppose you just find out if you will what you were paying in June, 1920.

Mr. DAVIS. There has been some reduction.

Gen. TAYLOR. Considerable reduction.

Mr. DEMPSEY. Very much. I do not think you are paying a third.

Mr. DAVIS. A third?

Mr. DEMPSEY. A third.

Mr. DAVIS. I think nearly a half.

Mr. DEMPSEY. I do not think so. The coal itself is costing but a third, but the transportation cost remains the same. How much the aggregate result is I do not know.

Gen. TAYLOR. I would like to say that whatever may be the cost of coal, whatever the purchase price may have been at the time the estimate was submitted, that is a low estimate—that is, we are figuring for 15 months \$750,000, which is \$50,000 a month for running expenses. That includes the seagoing dredges, the *Delaware* and the *Manhattan*, and the rehandling machine, which is a pipe-line dredge, a 20-inch pipe-line dredge, and the incidental plant. In other places, for instance in Norfolk, in the last two months, dredges very similar to the *Manhattan* and the *Delaware*, have cost about \$40,000 a month each to operate. So that based on the actual cost of operation of similar dredges in those months we could not have operated at that time for \$50,000 a month. That is a very low estimate.

Mr. DEMPSEY. These dredges, with which you compare, are used in Norfolk?

Gen. TAYLOR. In Norfolk and in New York also. In both places they are estimating the last three months that dredges would cost in the neighborhood of \$50,000 a month to operate.

Mr. DAVIS. For each dredge?

Gen. TAYLOR. Yes; \$50,000 a month.

Mr. DEMPSEY. I think you must be wrong about that, General, because here you have got two dredges.

Gen. TAYLOR. That is what it actually costs. For instance, we have a dredge that is operating in Norfolk—the *Chinook*. It is a somewhat larger dredge than either of these dredges, and it cost last month to operate about \$45,000.

Mr. DEMPSEY. Do you know when the coal was bought with which they operated during that time? Was it an old purchase?

Gen. TAYLOR. We purchased it from day to day, practically.

Mr. DEMPSEY. Do you know whether or not you have gotten the benefit of any reduction in the price of coal?

Gen. TAYLOR. We have; yes sir.

Mr. DEMPSEY. Repairs to the above plant, 1921–22 season, \$100,000. Now in making that estimate, did you use the last prewar year, 1914, as a basis. I want to have some basis on which we are going.

Gen. TAYLOR. We did not use the 1914 estimate, and certainly will not get down to that the next year, or to anything like the 1914 estimate. I am absolutely certain of that, because for instance the wages of the crews are not coming down anywhere near the 1914 wages.

Mr. DEMPSEY. You are getting some reduction in wages?

Gen. TAYLOR. We are getting some, a little reduction. We have never paid quite as high wages as the Shipping Board has, but we have to use practically the same character of men. For instance these dredges of which I am speaking are really ships, good, big ships. The *Chinook* which I spoke of, the dredge at Norfolk, was formerly an Army transport, and was run for a long while from San Francisco to Manila.

Mr. DAVIS. Will you reduce proportionately with the Shipping Board rates?

Gen. TAYLOR. We will. We pay our crews no more than is necessary to obtain competent crews.

Mr. DAVIS. I did not know but that you were using the Shipping Board as a maximum or minimum.

Gen. TAYLOR. We never got up to the maximum paid by the Shipping Board. We had difficulty in getting crews at all with the wages which we paid.

Mr. DEMPSEY. Construction of new plant, nine steel dump scows, \$90,000. Have you decreased that? There has been a great reduction in the price of steel, which has been reducing in the last month or six weeks very considerably.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. So probably something could be saved on that item, and the same as to the steel water scow.

Gen. TAYLOR. I can say, Mr. Chairman, that that item for the dump scows of \$90,000 each—we let a contract day before yesterday for five at \$67,000 each, which is a reduction of \$23,000 below our estimate, and we had advertised for these same scows a few months ago and rejected the bids on account of excessive prices, and we had only two or three bids. This month we had 16 bids for these scows, and with a reduction of \$23,000 from our estimate.



Mr. DEMPSEY. Every independent steel mill in the country has announced two or three reductions in the price of steel in the last 60 days.

Mr. DAVIS. And there will be more.

Mr. DEMPSEY. There is still to be more.

Now, dredge *Corozal*, care and overhaul, \$30,000. Of course, there has come in the same question of operation and reduction of tugs, nine months, and disposal of output by contract—those are all subject probably to some reduction?

Gen. TAYLOR. They are all subject to some reduction, but not very heavy reduction.

Mr. DEMPSEY. I take it that the engineering office expenses and contingencies would remain pretty much fixed?

Gen. TAYLOR. Pretty much the same; yes.

Mr. DEMPSEY. Now, all that can be said in a general way, General, about this item, both as to improvements and maintenance, is that there are some reductions on which we can figure. Here is a large project which should be treated as liberally as the state of the Nation's finances will permit, but it is a reasonable project depth at the present time?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That would summarize it, would it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, Mr. Small, have you some questions to ask the general in regard to either of these items?

Mr. SMALL. No; I think you have covered it.

Gen. TAYLOR. You were asking a little while ago about the draft of vessels. On page 400 is a table giving the depths of various classes.

Mr. DEMPSEY. The Army transports run from 30 to 34, and the battleships from 26 to 31. The rest of them run from 18 to 30.

Mr. SMALL. There is a tide of 5 feet.

Gen. TAYLOR. And the oil carriers 30 to 31.

Mr. DEMPSEY. That is right at the bottom of page 400. They have a tide, General, of 5 feet?

Gen. TAYLOR. Yes, sir; approximately.

Mr. DEMPSEY. How long does that tide last?

Gen. TAYLOR. You have two high tides and two low tides a day.

Mr. DEMPSEY. How long does it last?

Gen. TAYLOR. It reaches high tide and immediately begins to ebb.

#### HARBOR OF REFUGE, DELAWARE BAY, DEL.

Mr. DEMPSEY. Now, let us take the next item, Harbor of Refuge, Delaware Bay, Del., page 413. Now, this Delaware Bay Harbor of Refuge is at the entrance of Delaware River, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, General, is there considerable use made of that as a harbor of refuge or not?

Gen. TAYLOR. That provides an anchorage ground at the entrance of Delaware Bay and the use of that would depend altogether on weather conditions. It is, I know, very extensively used under certain conditions of weather.

Mr. DAVIS. The number of vessels using it apparently diminishes every year.

Mr. DEMPSEY. Where do you get that, Mr. Davis?

Mr. DAVIS. In the memorandum book, right under the remarks column—in 1916, 865; 1917, 788; 1918, 689; 1919, 467.

Gen. TAYLOR. That, of course, would depend on weather conditions and the character of the vessels using it. As the size of the vessels increase, the number using the harbor becomes less and less. In other words, the bigger the vessel the less she cares for a storm outside. That harbor was of much greater use in the days when the sailing vessels were going along the Atlantic coast than it is at the present time, but it still is a very important harbor for refuge. As a harbor of refuge it is the most important harbor on the Atlantic coast; that is for the reason that it is right close by the track of vessels, and when a vessel comes down the bay it can, if conditions are adverse outside, go in for shelter, and incidentally vessels working up the coast can easily find shelter here. That is very near to the Atlantic Ocean.

Mr. DAVIS. Will you state for the record what conditions usually compel vessels to enter the harbor of refuge?

Gen. TAYLOR. Severe storms.

Mr. DAVIS. And disabled vessels?

Gen. TAYLOR. A disabled vessel might use it.

Mr. DEMPSEY. If you will turn to page 3495 you will find the statistics as to the use made of the harbor. It appears from that that during the year 1919 six vessels used it in distress.

Gen. TAYLOR. Five steamers.

Mr. DEMPSEY. And one sailing vessel, making a total of six. And for harbor purposes 103 steamers, 95 sailing vessels, and 232 barges, making a total of 430; and for orders, 28 steamers, 2 sailing vessels, and 1 dredge, making a total of 31.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you mean, "for harbor purposes." That the same thing, I take it, as a harbor of refuge.

Gen. TAYLOR. No; that might be the case of a vessel working down the river when she gets to that locality the conditions are not favorable for her going on, and she comes in there to get shelter. The vessel might not be in distress—might just come in for comfort and convenience.

Mr. DEMPSEY. In what class do you place this item?

Gen. TAYLOR. Well, there has been no work on those piers for a long time, and they have gradually gotten into a rather dilapidated condition, and the repairs are something that should be made as soon as possible. Possibly another year would not make any very great difference. Possibly it would depend a little bit on the weather conditions. For instance, if you have a winter of severe ice and storms, the piers would probably suffer very badly if they were not repaired. You are taking a chance if you put them over, that is all.

COOPER, SALEM, COHANSEY, AND MAURICE RIVERS, WOODBURY, MANTUA,  
AND RACCOON CREEKS, N. J.

Mr. DEMPSEY. Then we come to the Wilmington district, and the first item is Cooper River, N. J., \$10,000 for maintenance. There are 136,000 tons of commerce, with a value of \$2,390,000. It is a river flowing into the Delaware River just south of Camden?

Gen. TAYLOR. Yes; above Camden, or the upper part of Camden, directly across; about the center of Philadelphia Harbor.

Mr. DEMPSEY. That commerce must be loadings from local plants, I take it.

Gen. TAYLOR. Yes, sir. This is the light-draft navigation, barge navigation. Some materials are brought in from barges that come up and down the coast. Some of that is stuff that is brought out for transshipment to vessels lying in the harbor.

Mr. DEMPSEY. Your project is 97 per cent completed, I see.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And this estimate, I see, while placed under maintenance, on page 417, near the top, is for dredging throughout the project length, as there is a good deal of annual shoaling. I see this has decreased in tonnage very greatly.

Gen. TAYLOR. That was the last year only.

Mr. DEMPSEY. It is not much over half of what it was in 1915.

Gen. TAYLOR. But 1916, 1917, and 1918 were practically uniform, you see, and the statement is made that the decrease in tonnage valuation is due probably to the scarcity of freight-carrying vessels.

Mr. DEMPSEY. They will always have a scarcity of freight-carrying vessels of that draft. In other words, the use of vessels of that draft is diminishing very rapidly owing to the fact that the overhead is out of proportion.

Gen. TAYLOR. I think that a barge suitable for navigation on a 12-foot depth will come into use very extensively.

Mr. DEMPSEY. Of barges that is true, I think; but you can not use vessels of that draft.

Gen. TAYLOR. This is really a barge navigation, going up this little creek.

Mr. DEMPSEY. Well, what do you say about that item?

Gen. TAYLOR. I think it is an essential item.

Mr. SMALL. That is for Cooper Creek?

Gen. TAYLOR. Yes, sir.

The item in the 1919 river act says:

Cooper, Salem, Cohamsey, and Maurice Rivers; Woodbury, Mantua, Raccoon, Oldmans, and Alloway Creeks, N. J.: For maintenance, \$20,000; for improvements of Raccoon Creek in accordance with the report submitted in House Document No. 800, Sixty-third Congress, second session, \$39,770; in all, \$59,770.

So that \$39,770 would be available for Raccoon Creek only, and \$20,000 is available for maintenance of any one of those improvements.

Mr. DEMPSEY. That dispenses with the item of Raccoon Creek, does it not?

Mr. SMALL. I do not understand that.

Mr. DEMPSEY. General, you will have left there about \$90,000 aside from Raccoon Creek as of September 1, 1920?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, with that in mind, that you will have a fund of \$90,000 on hand, what would you say, can you reduce the estimate to \$51,000?

Gen. TAYLOR. In the consolidated money statement for the group on page 436 of the report, the balance available is given, including \$52,107.60, available only for maintenance. That is the part that

is available for maintenance for any of those works. The balance is made up of improvement items, which were appropriated for specific improvements the same as that one for Raccoon Creek to which I referred.

Mr. DAVIS. Some of these are more important than others?

Gen. TAYLOR. Yes; some are more important than others.

Mr. DAVIS. Do you think with \$30,000 for maintenance that you could use it on the more important ones and get along with that sum?

Mr. DEMPSEY. Including the amount on hand?

Gen. TAYLOR. I think that is probably correct. We can not tell now. I could not tell now on which ones the cut would be.

Mr. DAVIS. But you could use it on those most important?

Gen. TAYLOR. On those most important; yes, sir.

Mr. SMALL. In your consideration of \$40,000 as being necessary, is that for maintenance?

Mr. DEMPSEY. \$30,000.

Gen. TAYLOR. For maintenance. I thought you said \$40,000. I should not like to cut it as low as \$30,000. Forty thousand dollars would probably do, but I do not think \$30,000 would.

Mr. DAVIS. You might leave out some of the less important.

Gen. TAYLOR. We would have to. All of those streams shoal every year. They come in on low ground, and the sluggish current enters the Delaware River under conditions that are favorable to rapid shoaling, and in order that the working depth may be retained they must have redredging almost every year. They all do a considerable business with small boats.

Mr. DEMPSEY. Now, let us run through these items. I will ask you one question as to all of them. Starting in with Cooper River, page 415, I see that the project depth there is 12 feet, and that that is practically completed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. So that is a redredging proposition?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, the next one—Woodbury Creek.

Gen. TAYLOR. That is 6 feet. That is a small motor-boat proposition.

Mr. DEMPSEY. But, General, that is not a commercial proposition, is it, any longer?

Gen. TAYLOR. It is; yes, sir. The small motor boats that ply on those streams carry garden truck, produce that is raised along the stream, fish, and oysters, and they do a very considerable business from those small towns, some of which do not have very good railroad communication, to Philadelphia. They are really feeders to Philadelphia.

Mr. DEMPSEY. I did not suppose it was practical any longer to really attempt to do business on streams of less than 12 feet.

Gen. TAYLOR. Oh, yes; it is. A good many small motor boats draw less than 6 feet, and they carry considerable cargo.

Mr. DEMPSEY. Mantau Creek.

Mr. SMALL. Great commerce is carried on the Rhine, which does not exceed 6 feet.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Mantau Creek is 12 feet?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is about 85 per cent completed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Raccoon Creek is 7 feet. That is about 75 per cent completed, page 273?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Oldmans Creek is 6 feet, and about 50 per cent completed?

Salem River is 9 feet, practically completed—page 427.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Alloway Creek is 6 feet. It is completed. That is correct, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Cohansey River, 7 feet, and was completed in 1912—page 421.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Maurice River is 7 feet, 45 per cent completed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, we come to the item which Mr. Small referred to, \$15,000 for the further improvement of Maurice River. Now, it is proposed to apply the funds estimated for the fiscal year 1922 in continuing the work of improvement of the remaining portion of the project and maintenance dredging of the channel to project dimensions. Would that necessitate the sending of a dredge there?

Gen. TAYLOR. It would be a small dredging job, that would be taken by contract by a contractor who has a small dredge. It would be done in connection with the maintenance work.

Mr. DEMPSEY. What do you say as to the improvement item there? How would you classify that?

Gen. TAYLOR. I should classify that as desirable.

Mr. DEMPSEY. Any other questions, Mr. Small?

Mr. SMALL. I think not, sir.

#### JAMAICA BAY, N. Y.

Mr. DEMPSEY. I think Mr. Cleary wants to say something.

Mr. CLEARY. I understand that this is perhaps out of order, but I just happened to hear that the General was here, and thought, perhaps, he could answer some questions. In the first place I want to present some resolutions.

Gen. TAYLOR. About Jamaica Bay?

Mr. CLEARY. Whether the 30-foot depth is authorized or would be. Is there anything new on that?

Gen. TAYLOR. No.

Mr. CLEARY. I was going to ask, if it would not be out of order, that these resolutions might be put in the record so that you would have them.

Mr. DEMPSEY. What are they, with regard to the project?

Mr. CLEARY. Yes, sir.

Mr. DEMPSEY. You see that would come before the regular committee.

Mr. CLEARY. And then there is this situation: I might tell you so that I can write to them about it. They are asking me right along.

President Rigelman, of the Borough of Brooklyn, wants to go on digging on the 18-foot basis, but Murray Hulbert insists that they shall wait until the end of this Congress, hoping that we may have an authorization of 30 feet. He thinks it is a waste to undertake to make contracts for 18 feet.

Mr. DEMPSEY. Are there any suggestions?

Mr. CLEARY. They are not asking for any money just now.

Gen. TAYLOR. They are merely asking that the modification to 30 feet be adopted.

Mr. DAVIS. To get an expression of opinion as to what the next Congress will do?

Mr. CLEARY. No; to get this Congress to authorize it if they can.

Gen. TAYLOR. That is, before the Rivers and Harbors Committee. There are several reports before Congress now, and they are before the Rivers and Harbors Committee, and we can not do anything further until the committee authorizes us to do something.

Mr. CLEARY. We authorized you to survey it.

Gen. TAYLOR. That report has been submitted.

Mr. CLEARY. Well, then, you are agreed, providing Congress authorizes it?

Gen. TAYLOR. The report is before the committee, Mr. Cleary.

Mr. CLEARY. You are not objecting, I understand?

Gen. TAYLOR. I think you had better get the report and read the report. It is rather a long report, if I am not mistaken.

Mr. CLEARY. You do not know anything that I can say to them. We do not know whether we will pass anything at this session authorizing that.

Mr. DEMPSEY. What I would suggest, Mr. Cleary, is that you see Mr. Kennedy. You had better take it up with Mr. Kennedy before it comes before his committee.

#### COLD SPRING INLET, N. Y.

Mr. DEMPSEY. Now, the next item is Cold Spring Inlet. What is Cold Spring Inlet, simply a bay on the New Jersey coast?

Gen. TAYLOR. It is a small harbor down near Cape May—not very far from Cape May.

Mr. DEMPSEY. Where it says "Delaware breakwater," I suppose it means by that the breakwater of Delaware Bay.

Gen. TAYLOR. Yes, sir; it is very close to Cape May.

Mr. DEMPSEY. I see the project calls for a channel 25 feet deep, and 100 feet wide.

Gen. TAYLOR. When that project was adopted it was advocated very strongly by the Pennsylvania Railroad. They proposed to make quite a terminal down there and develop a large business, but the plans were changed and they have never made the development down there that was planned. For a long time there was practically no business there at all.

Mr. DEMPSEY. I see there are no commercial statistics.

Gen. TAYLOR. Yes. The Navy Department during the war used it very extensively for small boats, and it is still being used considerably for small boats by the Navy Department.

Mr. DEMPSEY. General, as it has developed that project is purely a naval project, is it not?

Gen. TAYLOR. It is principally a naval project for the benefit of the Navy. Incidentally some fishing vessels use it. It is a convenient harbor for them.

Mr. DEMPSEY. What I mean by that is the fact that there are no commercial statistics, which shows that it is of very little use for civil commerce.

Gen. TAYLOR. That is correct.

Mr. DEMPSEY. Do you not think before we make any appropriation that we ought to find out what the sentiment of the Navy is as to its necessity?

Gen. TAYLOR. I am satisfied the Navy would urge the improvement of that harbor. I have nothing in my records here to show it, but I am satisfied that they were very much interested in it and would urge that the work be carried on—that the channel be maintained.

Mr. DEMPSEY. Well, the question of adopting their suggestion would depend a good deal on the attitude of Congress on the question of maintaining or increasing the Navy.

Gen. TAYLOR. No; I do not think it would affect that question, because it is used by the small boats. It is not used by the larger types of the Navy.

Mr. DAVIS. Have they had trouble in using it recently?

Gen. TAYLOR. No, sir; but if it is not maintained it will quickly go to pieces. Some dredging is necessary and the jetties are in need of repair.

Mr. DEMPSEY. I see you have on hand \$27,000, a little over, as of December 1 of last year.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Which would make the necessary repairs to the jetties, probably—bottom of page 437.

Gen. TAYLOR. It is stated that the funds are insufficient.

Mr. DEMPSEY. Your estimate there is \$40,000, and assuming some reasonable reduction for reduction in cost, that is what I had in mind about the \$40,000 estimate.

Mr. SMALL. General, I see there is an available depth at Cold Spring of 20 feet.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Where do you get that, Mr. Small?

Gen. TAYLOR. In the middle of page 437.

Mr. SMALL. Page 437, under the paragraph "Condition at end of fiscal year." Would you be able to maintain that depth with the appropriation now available?

Gen. TAYLOR. I question whether we can or not, Mr. Small.

Mr. SMALL. The least amount that you would require in order to maintain the project depth of 25 feet until another bill?

Gen. TAYLOR. Well, possibly \$50,000.

Mr. DAVIS. You already have that available now.

Gen. TAYLOR. We have available \$20,000, or we did have on the 1st of December.

Mr. DAVIS. Then you think \$23,000 more would be sufficient?

Gen. TAYLOR. I mean \$50,000 more.

Mr. DEMPSEY. Would you not want to be satisfied, Mr. Small, before appropriating anything for the improvement; that there is some naval necessity, because there is no commercial necessity?

Mr. SMALL. I think so. I would not say "no commercial necessity," because it was used prior to the time the Navy began to use it.

Mr. DEMPSEY. In a very small way.

Mr. SMALL. In a very small way, yes; and by a small class of vessels.

ABSECON INLET, N. J.

Mr. DEMPSEY. The next item is Absecon Inlet, N. J., page 439. This is a project for a channel 12 feet deep, 300 feet wide?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And I see that when that has been deepened the question of continuing improvement work is to be determined in the light of commerce then developed, page 439.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the project has been completed—under "Conditions at the end of fiscal year." So it is a question of commerce, and I see that the commerce in 1919 was 3,700 tons.

Mr. DAVIS. You have some funds available?

Gen. TAYLOR. Yes.

ABSECON CREEK, N. J.

Mr. DEMPSEY. Absecon Creek was completed, the improvement of it, some time ago—in 1913. The controlling depth on June 30, 1920, was 5 feet across Absecon Bay outside the mouth and 4 feet within the creek to Absecon.

Gen. TAYLOR. That is a channel that is used by fishing boats, and while the commerce is not very large, it is quite an important little stream.

Mr. SMALL. What is the least amount you could get along with?

Gen. TAYLOR. That amount should not be reduced. While the commerce is not very much it is quite an important little stream.

Mr. DEMPSEY. You think that should be placed under the essential class?

Gen. TAYLOR. Yes, sir.

TUCKERTON CREEK, N. J.

Mr. DEMPSEY. The next item is Tuckerton Creek, N. J. That is a 6-foot project practically completed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Annual commerce of 5,000 tons?

Gen. TAYLOR. It is another project very similar to Absecon Creek. That is a project that is used by the small motor boats, principally fishing boats.

Mr. DAVIS. If you cut that in two, would it not be sufficient?

Gen. TAYLOR. It might or might not.

Mr. DEMPSEY. The two creeks, Tuckerton and Absecon, are only a few miles apart?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Tuckerton is north of Absecon? Well, I see you have a small amount on hand, \$550. How would you classify that?

Gen. TAYLOR. I think I should classify that in the essential class.

Mr. DEMPSEY. For what part?



Gen. TAYLOR. For what part of the \$10,000?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. Possibly they could get along with \$6,000.

WILMINGTON HARBOR, DEL.

Mr. DEMPSEY. Wilmington Harbor, Del., is entirely a maintenance item.

Gen. TAYLOR. It is a maintenance item; yes, sir.

Mr. DEMPSEY. That is a large harbor, I see.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You have on hand \$42,000, or practically \$43,000, and there are outstanding contracts for \$20,000. That makes \$50,000 available?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The project depth there of 21 feet has been completed, I see.

Gen. TAYLOR. Yes, sir. Wilmington is on the Christiana River, a few miles up from the Delaware, and the conditions are such that it shoals very rapidly, making it necessary to do continuous maintenance work. Unless it is continued the harbor would shoal to such an extent that they would not be able to use it.

Mr. DEMPSEY. Now, let us see; the appropriation for the year—

Gen. TAYLOR. Simply for the operation of the dredge that has been provided for that harbor.

Mr. DEMPSEY. You maintain a dredge in that harbor?

Gen. TAYLOR. Yes, sir. It is a special dredge of a type especially adapted for work in that mud, and with the conditions that require us to transport the material for some distance and then put it ashore, the amount given there is not more than enough.

Mr. DEMPSEY. Any questions, Mr. Small?

Mr. SMALL. Unless you might ask whether that amount estimated can be reduced?

Mr. DEMPSEY. I take it, General, that you regard this as essential, that the question of reduction is only small in the estimated cost of maintenance of that dredge. That is the only thing?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And it is a question whether that can be reduced on account of the lowering of wages and the decreased price of coal?

Gen. TAYLOR. That is all.

Mr. SMALL. It is an important project.

Mr. DEMPSEY. Yes. Do you not think that with the \$63,000 on hand you can figure that you can go ahead with \$75,000?

Gen. TAYLOR. I do not; no, sir. Because while we have \$63,000 on hand, \$20,000 of that is covered by outstanding contracts.

Mr. DEMPSEY. Well, that leaves \$43,000.

Gen. TAYLOR. \$43,000 on hand the 1st of December, and it costs approximately \$4,800 a month to operate the dredge. The report says that in 1919 the amount spent for the operation of that dredge was \$57,800, which very nearly corresponds to that \$4,800.

Mr. DEMPSEY. Well, you see, you ought, if you are going to get reductions in accordance with what everybody else is getting, to get 25 per cent off.

Gen. TAYLOR. No; we can not get that much off. We hope we will get considerable off on the cost of coal, but we will not be able to reduce it that much. We can give you what it has cost to operate that dredge for the last several years.

Mr. DEMPSEY. Take it any time previous to 1917.

Gen. TAYLOR. Mr. Chairman, that dredge was built in 1915. In the year 1916—that is the calendar year 1916—the operation and repairs cost \$64,956; in 1917, \$46,725. It was probably operated only a part of the year. In 1918 it was \$47,437; in 1919, \$58,000.

Mr. DEMPSEY. You have \$43,000 on hand. Suppose you had up to \$100,000. That would give you something above your highest amount. That will give you \$57,000.

Gen. TAYLOR. If we had no extraordinary repairs, we would probably be safe. That is \$60,000, instead of \$105,000?

Mr. SMALL. Making a total of \$100,000.

Gen. TAYLOR. Yes; \$60,000, instead of \$105,000.

Mr. SMALL. You are now saying that the total that you could get along with is \$100,000?

Mr. DEMPSEY. Yes; that would be the \$43,000 on hand and the \$60,000 to be appropriated.

Gen. TAYLOR. I say if there are no extraordinary repairs needed by the dredge. If we should have any unusual repair bills, we should not be sure.

INLAND WATERWAY FROM DELAWARE RIVER TO CHESAPEAKE BAY,  
DELAWARE AND MARYLAND.

Mr. DEMPSEY. The next item is a large one—inland waterway from Delaware River to Chesapeake Bay. That is the project we have just taken over.

Gen. TAYLOR. Yes, sir; we took that project over in 1919.

Mr. SMALL. A little over a year ago?

Gen. TAYLOR. Yes; August, 1919.

Mr. SMALL. May I say, before you begin questioning the General, that that is a very important project. It connects the Delaware River and the Chesapeake Bay, and out of the original appropriation when the project was adopted the existing Chesapeake and Delaware Canal has been purchased and is now owned and operated by the Government, and substantially no work has been done, no carrying out of the plan of improvement, which was to increase the controlling depth to 12 feet and convert it from a lock canal to a tide-level canal, and there ought to be appropriated in this bill a sum sufficient to enable them to begin and continue operations. Of course, I realize that that sum should be reduced to a minimum amount consistent with making substantial progress in operation until another bill.

Mr. DAVIS. Why was the increased estimate to complete over \$5,000,000?

Mr. SMALL. That is owing to increased cost of material and labor.

Gen. TAYLOR. The original estimate was made a good many years ago, when everything was relatively cheap.

Mr. SMALL. The original estimate was made in 1912.

Gen. TAYLOR. The excavation at the time of the original estimate was estimated at 15 cents. The cost of excavation at the present

time is 50 cents, nearly three times as much. The one item in the total cost of the canal which was not increased was what we would be obliged to pay for the canal. We estimated \$2,514,000.

Mr. DAVIS. Will you use all of this amount, \$2,500,000?

Gen. TAYLOR. It is a job, Mr. Davis, in which we should have a good big amount. It is a work where you gain no advantages until the work is completed. To do the work properly requires a considerable plant. A contractor going in there, for instance, would have to put in considerable plant. It is a good distance from a railroad. The railroad does cross one section, but no station is near the canal and most of the material would have to be shipped in by water. The facilities for housing employees are very limited, so that altogether the work is one which indicates that it should be made in large contracts in order to get anything like economical prices. Small contracts are sure to be expensive. We have estimated what we could do it for by the Government plants, and it requires a very considerable plant to do it economically.

You will notice it is not only an appropriation of two and a half million dollars, but also a continuing contract for seven and a half million more that is recommended. The Secretary of War in his annual report mentions this particularly. I do not know whether you know that, Mr. Small, that the Secretary made a trip through the canal and he was so impressed with the necessity of the completion of it that he made special reference to it in his annual report.

Mr. DAVIS. Do you think it would be advisable to make a continuing contract, continuing over two or three years, at the present prices?

Gen. TAYLOR. No, sir; we would not make it at the present prices, if we had authority to make it. We would make it when conditions are right to make it at a reasonable price. It is an authorization to make a contract.

Mr. DEMPSEY. This construction of new bridges—the amount to be expended is itemized on page 456, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And is as follows: First item, \$1,700,000 for the construction of new bridges.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now that estimate was made before any of the reductions in prices of steel had taken place in the last three months?

Gen. TAYLOR. That is correct; yes, sir.

Mr. DEMPSEY. And these of course will be steel bridges?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And these bridges are to be built preliminarily to the deepening and widening of the canal, I take it?

Gen. TAYLOR. Yes, sir. It is crossed by a certain number of bridges, and we are the trespassing party, so to speak, and we are obligated to reconstruct those bridges. There is another bridge, the Pennsylvania Railroad bridge, and we have notified them that they will have to rebuild that bridge at their own expense. The record shows that they went on and built the bridge after the canal was completed, and that they had certain provisions in their agreement with the old canal company which obligated them to rebuild the bridge themselves, and they have been given the proper legal notice that the bridge is an obstruction to navigation and ordered to change it.

Mr. DEMPSEY. Is that on the main line?

Gen. TAYLOR. No, sir; that is the line that runs down to Cape Charles City, and goes across to Norfolk. That is the New York, Philadelphia & Norfolk Railroad.

Mr. DEMPSEY. Now your next item is the purchase of additional necessary land. I take it that that is for widening the property and for dumping spoil?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the next is excavation and dredging by contract, \$670,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now I suppose there is some excavation and some dumping that you can do there before you get the additional lands purchased?

Gen. TAYLOR. Before we get all the lands; yes, sir.

Mr. DEMPSEY. And the other item is simply the overhead?

Gen. TAYLOR. The canal, the present route, runs into the bay north of old Fort Dupont. It is proposed to change it to make a better line and run it south of Fort Dupont.

Mr. DEMPSEY. At the east end where it connects with the Delaware River?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the Pennsylvania Railroad, I see, cuts it just about a third of the way from the east side toward the west side?

Gen. TAYLOR. It is not far from the middle of the canal, and crosses it at the highest point.

Mr. DAVIS. What is the length of the canal?

Gen. TAYLOR. Thirteen miles; and that canal will save a vessel traveling between Philadelphia and Baltimore, for instance, 325 miles. It is approximately 125 miles from Philadelphia to Baltimore via the canal and 450 miles outside, and at least 200 miles of that 450 are in the open sea. This gives a protected route inside.

I would like to add that at the present time, or, at least, before we took over the canal, even with the great disadvantages under which navigation was carried on, there was a business of a million tons a year through the canal.

Mr. DAVIS. From whom did you take it over?

Gen. TAYLOR. The Chesapeake & Delaware Canal Co. It was built many years ago. The locks are only 24 feet wide, and it was a shallow canal, supposed to be 10 feet in depth, but actually was less than that, so that the size of the vessels that could use it was very limited, and they charged a considerable toll. But even under those circumstances a million tons of business went through it.

Mr. DEMPSEY. That was some years ago?

Gen. TAYLOR. Yes. A large part of that business was lumber. As the lumber business between the South and the North has diminished, the commerce through that canal has fallen off somewhat. I have here statements, month by month, of the commerce through that canal recently.

Mr. SMALL. That is interesting, General. Will you put that in?

Gen. TAYLOR. For instance, in September, 1919, the commerce through the canal was 44,509 tons.

Mr. DEMPSEY. At the rate of half a million tons a year.

Gen. TAYLOR. October, 1919, it was 37,845 tons; November, 1919, 37,404 tons. Let us take a little later than that. In August, 1920, it was 53,563 tons; in September, 1920, it was 52,686 tons; in October, 1920, it was 51,497 tons; and in November, 1920, 48,332 tons.

Mr. DEMPSEY. It has been growing for the past year?

Gen. TAYLOR. It is a little more now than it was a year ago.

Mr. DEMPSEY. Is there anything more that we want on that, Mr. Small?

Mr. SMALL. Unless you wish to inquire as to the least amount, in the event that we find that we can not give two and a half million dollars.

Mr. DEMPSEY. I would suggest, General, that on the large items like this where \$1,700,000 is estimated for the construction of bridges, that it might be well, if you can find the time, to make a new estimate for that item.

Gen. TAYLOR. I am afraid I could not have time to do that, Mr. Chairman, in the time that you have available.

Mr. DEMPSEY. They have announced, I think, two or three big cuts in steel since, anyway, September 15, and I do not know but since October 1.

Mr. DAVIS. Probably there will be more before the funds are needed.

Gen. TAYLOR. We can use advantageously, there, whatever amount the committee feels they can give us, from \$1,000,000 up.

Mr. DAVIS. You can use that advantageously?

Gen. TAYLOR. Yes, sir. The more we have the more economically we can do the work, and the sooner we can have the improved canal open to traffic.

Mr. DEMPSEY. Of course, the construction of bridges is a distinct thing.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the purchase of your additional necessary land is a distinct thing?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And then the third thing comes your dredging.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, as I understand this project, as shown here at the bottom of page 454—and I would like to be clear about this, Mr. Small—it seems to contemplate locks still.

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. There are two there.

Gen. TAYLOR. It contemplates the removal of the locks. There are three existing locks, two locks from the Delaware River up to the summit level, and one lock from the summit level down to the Chesapeake Bay. The program will be first to reduce the summit level one-half, approximately, taking out one of the locks on the Delaware River end and then take out the other locks at both ends, dropping down to sea level, and increasing the depth to 12 feet.

Mr. DEMPSEY. Well, now, just look along to the bottom of page 454 and see what that means, "Removal of the lock at St. Georges (10-foot lift), making a single level throughout 10 feet deep, with locks of 7-feet lift at each end."

Gen. TAYLOR. That means that there are two locks now going from the Delaware River up, and we will take out the one at St.

Georges, dropping the summit level down. That will leave a lock at each end. When we have the canal deepened, then we will take out those two locks.

Mr. DEMPSEY. I see.

Mr. SMALL. The Chesapeake and Delaware waterway is so valuable as a commercial proposition, plus its military necessity, it ought to be completed at as early a date as may be practicable, and we should make as large an appropriation in this bill as is possible. You intend to make it entirely tide level?

Gen. TAYLOR. We intend to make it entirely tide level, and that will make business freer through there.

#### APPOQUINIMINK RIVER.

Mr. DEMPSEY. Now, let us take the next group of items, starting with Appoquinimink River and ending with Broadkill River, Del., embracing 8 items. Now the maintenance items aggregate \$80,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And improvements \$55,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. There is on hand \$67,723, and there are outstanding contracts apparently of about \$17,600.

Mr. SMALL. That is as of December 1?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, let us see. The business on all those is small, very small, except the Little River and Murderkill River.

Gen. TAYLOR. Murderkill River is the largest.

Mr. DEMPSEY. Little River and Murderkill River seem to be the only two that have any considerable traffic. On the rest it is very small. Now, taking into consideration the fact that we have to have a reasonably small bill and that you have on hand \$67,000, with some small amount in contracts, what do you say; do you say that any of those amounts are essential?

Gen. TAYLOR. A certain amount of money is essential for the maintenance of those improvements. Taking them individually, I could not say which ones of them we would reduce. Taking them collectively, I am satisfied, however, that \$40,000, half of the estimate, would be sufficient. The disposition of that \$40,000 would depend entirely upon what the conditions were later in the season.

Mr. DEMPSEY. Is there anything needed for further improvements?

Gen. TAYLOR. I think no serious harm would be done if those were deferred.

Mr. DEMPSEY. Is there anything more, Mr. Small?

Mr. SMALL. I think not.

#### INLAND WATERWAY BETWEEN REHOBOTH BAY AND DELAWARE BAY, DEL.

Mr. DEMPSEY. The next item is inland waterway between Rehoboth Bay and Delaware Bay, Del., \$10,000 for maintenance and \$40,000 for improvement. There is \$43,000 on hand there?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, let us turn to that item, page 476. The project is for a 6-foot waterway, which has been 67 per cent completed.

Gen. TAYLOR. Rehoboth Bay is a little waterway that leads up to the coast of the Delaware.

Mr. DEMPSEY. Well, suppose we appropriated the amount necessary for maintenance there, leaving final improvement of that to be deferred for the present.

Gen. TAYLOR. Yes, sir.

INLAND WATERWAY FROM CHINCOTEAGUE BAY, VA., TO DELAWARE BAY,  
AT OR NEAR LEWES, DEL.

Mr. DEMPSEY. The next item is inland waterway from Chincoteague Bay, Va., to Delaware Bay, at or near Lewes, Del. Is that where the Chincoteague oysters come from?

Gen. TAYLOR. It is supposed to be.

Mr. DEMPSEY. \$1,500 on hand. What do you say as to that?

Gen. TAYLOR. There are three bridges on that canal that were built by the Government, and which we are bound to maintain, and that \$1,500 is for the maintenance of those bridges.

Mr. DEMPSEY. All right. They are essential?

Gen. TAYLOR. Yes, sir.

WATERWAY ON THE COAST OF VIRGINIA.

Mr. DEMPSEY. The next item is waterway on the coast of Virginia, page 481. A 4-foot waterway, maintenance and dredging where necessary. That is a pretty small project?

Gen. TAYLOR. It is a small project, used by small oyster boats.

Mr. DEMPSEY. Would that suffer much if it did not get anything this year? What do you think about that, Mr. Small? It is down in your country?

Mr. SMALL. It is very important for those people there—some means of transportation.

Mr. DEMPSEY. We will call it essential. Anything more on that item?

Mr. SMALL. No.

---

JANUARY 11, 1921.

BALTIMORE HARBOR, MD.

Mr. DEMPSEY. General, This project embraces a channel 35 feet deep, 1,000 feet wide, and  $4\frac{1}{2}$  miles long in Chesapeake Bay, and 35 feet deep and 600 feet wide from below the mouth of the Patapsco River to Fort McHenry, 20 miles. That makes a 35-foot channel practically from the entrance of Chesapeake Bay up to the wharves of the city of Baltimore?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, where is your project channel 35 feet deep, 200 feet wide, in the Curtis Bay?

Gen. TAYLOR. That is the channel leading into this section of the harbor.

Mr. DEMPSEY. Now, then, where is your 27-foot channel, 250 feet wide, to the Western Maryland Railway bridge? It is really a part of the same project, the channel to southwest Baltimore Harbor, is it not?

Gen. TAYLOR. Yes, sir; it is all one project.

Mr. DEMPSEY. Then, where is this 35-foot depth of the inner harbor inside Fort McHenry? I see your three widths of entrance of various branches of Baltimore Harbor are 1,000 feet, the main entrance 600 feet into the harbor proper, at Baltimore, and then 250 feet and 400 feet, respectively, for the other two branches.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, let us see. That branch into the Curtis Bay is about half completed, is it not; and the one into southwest Baltimore about one-sixth completed? The main channel has been improved to project dimensions?

Gen. TAYLOR. That has been completed; yes, sir.

Mr. DEMPSEY. And the whole project is about 83 per cent completed?

Gen. TAYLOR. I think that is right.

Mr. DEMPSEY. What you propose to do with the funds on hand and to be appropriated is the dredging of the Fort McHenry section and to complete your project in Curtis Bay and southwest Baltimore?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. I suppose the Curtis Bay and the southwest Baltimore sections and the Fort McHenry sections are really the three harbor sections, are they not?

Gen. TAYLOR. The Fort McHenry Channel is a straight channel leading up to Baltimore Harbor. It is part of the main entrance channel. The Curtis Bay Channel and the southwest Baltimore Harbor Channels are both branches leading up to the terminals of the city. On both of those branches are very large coal pockets. You see, the Curtis Bay Channel leads up to a pocket of the Baltimore & Ohio, and there are large coal-handling facilities on both of those channels.

Mr. DEMPSEY. You propose to do two things—to remove the shoaling in the Cutoff and Brewerton Channels. That would be up there in the Fort McHenry section?

Gen. TAYLOR. Here is the Brewerton Channel and here is the Cutoff Channel [indicating]. Those are channels near the lower end of the channel leading into Baltimore Harbor.

Mr. DEMPSEY. And they have to be dredged to the proposed project depth?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Now, General, you have on hand, I see, approximately \$250,000 in cash as of December 1, and \$158,000 in outstanding contracts, making about \$400,000 in all?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What have you spent in the Baltimore Harbor in some year when you had normal conditions—not in the war period, but some other period?

Gen. TAYLOR. There have been no large expenditures for maintenance in Baltimore Harbor for several years. The last large expenditure prior to 1920, which is \$167,000, was in 1915, when \$229,739 was also expended for new work.

Mr. DEMPSEY. What year was that?

Gen. TAYLOR. 1915. The amount expended for maintenance in the last five years has been \$22,000, \$42,000, \$11,000, \$54,000, and \$15,000,



so that the amounts expended for maintenance have been relatively small, but there has been a large increase in business in Baltimore Harbor recently, and we have had a considerable number of complaints about the condition of the channels.

Mr. DEMPSEY. That is about the condition of the Brewerton and cut-off channels?

Gen. TAYLOR. More particularly about the end in southwest Baltimore—that channel.

Mr. DEMPSEY. Well, take this harbor as it is to-day; it really is in about as good condition as any harbor on that coast, is it not, as a whole?

Gen. TAYLOR. I should say generally the entrance channel at Baltimore Harbor is in a very good condition. The branch channels are not so good, particularly the channel into southwest Baltimore. We are working on a new channel there—widening, deepening, and straightening out the channel.

Mr. DEMPSEY. You have approximately \$400,000. Taking the whole situation into account, what do you think would be a reasonable amount, considering in addition the fact that the bill must be of comparatively small amount in accordance with the financial conditions?

Gen. TAYLOR. It depends very largely on how fast the work into Southwest Harbor is to be carried on. Exclusive of that work—and that is covered by the further improvement work, principally—I think that half of the amount for maintenance would be reasonably safe.

Mr. DAVIS. Is the improvement work something that has to be done at this time, absolutely necessary?

Gen. TAYLOR. I should not say that it is absolutely necessary. They can get along the same as they have been getting along in the past, without it being done. It is something very desirable and should be done because there have been large developments down there in that section of Baltimore, and the failure to complete that channel will hold those developments back.

Mr. DEMPSEY. General, the completion of the project is a question of the development of new business on that Southwest Harbor?

Gen. TAYLOR. That is the principal thing; yes, sir.

Mr. DEMPSEY. The commerce of Baltimore, generally speaking, aside from the improvements there, is in pretty good condition?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. General, the southwest harbor part of the Baltimore project seems to be only about 20 per cent completed?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. And it seems to be further dependent on local cooperation to the extent of furnishing a bulkhead behind which material may be placed. What is the cause of the delay on the part of Baltimore in furnishing the bulkhead—inability to furnish the location or financial condition?

Gen. TAYLOR. I think it is a difference of opinion in Baltimore as to what should be done.

Mr. SMALL. As to where the material should be placed?

Gen. TAYLOR. Yes, sir. I do not think the city authorities have all agreed on what ought to be done over there, where they desire to have the material placed.

Mr. SMALL. Is further improvement of southwest Baltimore Harbor dependent on getting the additional bulkhead behind which to place the material, or are there existing bulkheads that may be utilized at the present time?

Mr. DEMPSEY. Page 486, right in the middle of the page. They are not to furnish the bulkhead, as I read that, but they are to furnish the areas behind the bulkhead in which to deposit dredge material upon the requirements of the chief engineer, and I should say that the Chief of Engineers requires that they should furnish those areas. And I should ask, Has the Chief of Engineers required that they should furnish those areas?

Gen. TAYLOR. He has; yes, sir; and we have declined to go ahead and do a certain portion of that work for the reason that those areas were not furnished. That is the reason that we have as much money on hand as we have at the present time.

Mr. SMALL. That is the condition.

You said the amount estimated for maintenance might be reduced one-half?

Gen. TAYLOR. Yes, sir.

#### DRAFT OF MERCHANT VESSELS.

Mr. DEMPSEY. General, what is your understanding of the relative or comparative number of commercial vessels using the Atlantic ports drawing above 30 feet of water and where could exact statistics on the subject be obtained? In other words, what is the percentage of vessels as compared with vessels of other types and what percentage of the freight do they carry as compared with the vessels of other types using the same ports?

Gen. TAYLOR. Perhaps the best way to answer that will be to say that the statistics can all be found in Lloyd's Register. Lloyd's Register for 1918 and 1919 shows that out of 14,513 steamships listed 81.45 have a draft of 25 feet or less and 99.32 draw 30 feet or less, leaving a percentage of 0.68 of 1 per cent of vessels with over 30 feet draft. This preponderance of vessels of less than 30 feet draft is illustrated by the fact that in the first six months of 1914 out of 4,476 ships which paid pilot fees at the port of New York 4,402, or 96 per cent, drew 30 feet of water or less. Only 28 of the ships drew more than 35 feet. Those 28 were, I think, entirely the large transatlantic liners of the type of the *Leviathan*, which are purely passenger and express freight ships. They were not commercial freighters at all.

Mr. DEMPSEY. Is there anything in the statistics to show the comparative cost of freight transportation in boats drawing more than 30 feet and those drawing under 30 feet?

Gen. TAYLOR. The transportation, computed by itself, is cheaper the larger the boat, because of the bigger cargo that you can carry. There are other things to be considered, the turnaround, the difficulty of obtaining cargo, the comparatively few places where such a large cargo can be obtained, and when it is called for.

Mr. DEMPSEY. In other words, you have to take into account the overhead?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And not simply the voyage between ports?

Gen. TAYLOR. Exactly. The reason why transportation on the Great Lakes is the cheapest transportation in the world is not the fact that those boats carry the biggest cargo in the world, but from the rapid turnaround. One of those big Lake freighters will go into Duluth or one of the other harbors with a load of 10,000 tons of coal, and she can discharge the coal and take on a load of ore and come out again inside of four hours. The record for loading 13,000 tons of ore is 29 minutes. They handle a load of coal in from four to six hours. So that those boats are used practically continuously. It is a continuous voyage with them from the beginning of the season until the end. Ships that come into New York Harbor, for instance, are frequently detained there for days and weeks, and every day's delay means from \$3,000 to \$5,000 loss to the owners of the ship. That means that the turnaround is a very essential part of the cost of transportation.

Mr. DEMPSEY. Is there anything more on Baltimore, Mr. Small?

Mr. SMALL. No, sir.

CAMBRIDGE AND CRISFIELD HARBORS, ELK AND LITTLE ELK, CHESTER, COR-SICA, CHOPTANK, WARWICK, LA TRAPPE, WICOMICO, AND POCOMOKE RIVERS, SLAUGHTER CREEK, TWITCH COVE, AND BIG THOROUGHFARE RIVER, AND LOWER THOROUGHFARE, DEAL ISLAND, MARYLAND; AND BROAD CREEK RIVER, DELAWARE.

Mr. DEMPSEY. Let us take the next group, and it seems to include a large number of projects. General, suppose we take all the remaining items on pages 12 and 13, with the exception of Queenstown Harbor, Claiborne Harbor, and Tyaskin Creek, the excepted ones being the only items of any size. What would you say as to the items other than those excepted on pages 12 and 13 all being maintenance items? What class shall we put those in; in the advisable or desirable class?

Gen. TAYLOR. The total estimate for that large group of items outside of the three which you have excepted amounts to only \$18,400. They are all small harbors, most of them used by fishing boats, fishing and oyster boats, and all of them are feeders to Baltimore Harbor. They are all of them used by motor boats of a draft such that if the projects, which are very small, shoal, there will be considerable interference with business. In order that we can do work economically in those harbors it is necessary for us to combine a number of them into one project. We let a contract for dredging half a dozen of those harbors that are comparatively near together. I do not think we should reduce that appropriation of \$18,000 for maintenance.

Mr. DEMPSEY. And you think there is a genuine commercial use made of those harbors?

Gen. TAYLOR. Yes, sir. If you will notice the tonnage, the tonnage of those harbors runs from quite small, some of them, up—there is one 67,000 tons, 42,000 tons, 28,000 tons, and there is one of 71,000 tons. So that in the aggregate the tonnage is quite large when you consider it in comparison with the amount of money that is necessary to maintain those harbors in a navigable condition.

## QUEENSTOWN HARBOR.

Mr. DEMPSEY. Let us see the three excepted items. I see the first is Queenstown Harbor, Md., \$10,000. That is the estimate. That has next to the smallest tonnage.

Gen. TAYLOR. Yes, sir. One reason why it is necessary to spend so much at this time is because there has not been anything spent there at all for the past five years.

Mr. DEMPSEY. The project, I see, is complete.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And it is a question of removing the shoals which have formed since completion.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Well, taking into account the fact that the tonnage has decreased there to pretty nearly a third, less than half, considerably of what it used to be, and nearly a fourth of what it was in 1915, what do you say about that \$10,000?

Gen. TAYLOR. Well, I should consider that as not essential.

Mr. DEMPSEY. Now, would you consider it advisable to include some small part of that for some necessary work there?

Gen. TAYLOR. I should think it would be. I think that half of it would probably answer the purpose.

## CLAIBORNE HARBOR.

Mr. DEMPSEY. The next item is \$15,000 for Claiborne Harbor, Md., page 499. There is a little money on hand there, about \$7,000. The tonnage is larger than in Queenstown Harbor. That is another case, I see, of a completed project.

Gen. TAYLOR. Yes, sir; they are both completed projects, and are practically the same thing.

Mr. DEMPSEY. Removing shoals?

Gen. TAYLOR. Yes; exactly the same thing as the preceding project.

Mr. DEMPSEY. The tonnage has kept up quite a little better than the other harbor, I see.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you say as to that?

Gen. TAYLOR. I would say as to that the same as the other, about half of that would probably answer.

## TYASKIN CREEK.

Mr. DEMPSEY. There is one other, Tyaskin Creek, \$15,000, with \$7,800 on hand—comparatively small tonnage.

Mr. DAVIS. And less valuable too.

Gen. DEMPSEY. Yes. That is page 517.

Gen. TAYLOR. I think that one-third or \$5,000 would be sufficient.

Mr. DEMPSEY. Is there any question on any of these items?

Gen. TAYLOR. In that case as in the others, there has no work been done for the past five years, so that the average cost for maintenance is not large.

Mr. DAVIS. For these other small items you appropriated about \$18,000?

Gen. TAYLOR. Yes, sir. The total for that group was \$58,400, but of that \$40,000 was made up of the three items.

Mr. SMALL. And that may be reduced by \$17,500.

Mr. DEMPSEY. The \$58,000?

Gen. TAYLOR. Yes, sir.

POTOMAC RIVER AT WASHINGTON, D. C.

Mr. DEMPSEY. The next is Washington, D. C., district. The first item is Potomac River at Washington, page 532, \$30,000 for maintenance, \$13,700 on hand, and a small amount, \$650, in outstanding contracts.

Gen. TAYLOR. Notice in that case that the commerce has increased in the past year very largely in value and considerably in tonnage.

Mr. DAVIS. What does that tonnage consist of chiefly?

Gen. TAYLOR. It is sand, gravel, coal, naval ordnance and supplies, general merchandise, brick, cordwood, stone, oyster shells, oysters, clams, melons, and lumber.

Mr. DEMPSEY. General, if you will look at the comparative statement now shown you on page 3541, you will see that this is a tonnage of 150 per cent of the maximum previous to 1919, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. In other words, there is a very considerable commercial commerce at this city at the present time?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, does general merchandise include food supplies?

Gen. TAYLOR. No; the food supplies are in separate items—farm produce, eggs, corn, grain, live stock, poultry, melons, and canned goods.

Mr. DEMPSEY. Where do you get that?

Gen. TAYLOR. That is on page 3542.

Mr. DEMPSEY. Now, that \$30,000, General, is to be expended in dredging the Washington Channel, and in embankment work around Columbia Island, and in repairs, upkeep, and maintenance of the tidal gates and your plant?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And in miscellaneous expenses?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, will you tell us what you call the Washington Channel and what you call Columbia Island?

Gen. TAYLOR. Yes, sir. This is the Washington Channel coming up the river.

Mr. DEMPSEY. From the south, running north?

Gen. TAYLOR. From the south, running north. This is the Washington Channel [indicating], and this is Potomac Park in here.

Mr. DEMPSEY. What you mean by Potomac Park is down here beyond the Speedway?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. You pass the Washington Channel to get to Potomac Park, and Potomac Park is between the main river and the channel?

Gen. TAYLOR. This is the Tidal Basin. This has controlling gates at this point [indicating] and at this point for letting the water in

through this way and letting it out through these gates, flushing out this channel, otherwise it would be a dead-end channel, and there would be nothing to wash out the sewage or anything that went into that channel.

Mr. DEMPSEY. Do we dump our sewage there?

Gen. TAYLOR. Some sewage goes into that channel so that this Tidal Basin is used for flushing it out. This is the Virginia channel on the west side of Potomac Park.

Mr. DEMPSEY. To make the record show, the Washington channel is between what is popularly known as the Speedway and Potomac Park?

Gen. TAYLOR. No; between Washington Barracks and Potomac Park, leading up to the wharves along the water front of the city of Washington.

Mr. DEMPSEY. And then what you would call the Virginia channel is south of Potomac Park?

Gen. TAYLOR. West, between Potomac Park and the Virginia shore. Then there is the other channel leading up the Anacostia River to the navy yard, the Eastern Branch.

Mr. DEMPSEY. That runs nearly straight north?

Gen. TAYLOR. It is a little east of north.

Mr. DAVIS. Where is Columbia Island?

Gen. TAYLOR. Columbia Island is not shown on this map. That has been used as a place for deposit of material.

Mr. DEMPSEY. Well, I suppose you regard that maintenance item as essential, do you?

Gen. TAYLOR. Yes, sir.

Mr. DAVIS. All of it?

Gen. TAYLOR. I think they should have all of that; yes, sir.

Mr. DEMPSEY. I think they attain such splendid results here in the work they have done on the river front that the amount named is a most necessary amount to maintain that and to do what ought to be done to keep that in proper condition.

Mr. SMALL. I think so.

#### OCCOQUAN CREEK, VA.

Mr. DEMPSEY. The next item is Occoquan Creek. What do you say about that?

Gen. TAYLOR. I think that is a very necessary item.

Mr. DAVIS. It is ultimately going to be a very important proposition in Washington, in my opinion.

Gen. TAYLOR. There has been a good deal of difficulty in keeping that channel open. It shoals rather rapidly and there is a large business between the city and the establishments on Occoquan Creek.

Mr. DAVIS. And it is going to increase?

Gen. TAYLOR. Yes, sir.

#### RAPPAHANNOCK RIVER, VA.

Mr. DEMPSEY. There is \$10,000 for Rappahannock River, Va., page 544. There are two appropriations there, one for the Rappahannock and the other for the Pamunkey River, and they are both

maintenance items. The Rappahannock is complete; that is, the project?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. This is to redredge the channel, I see.

Gen. TAYLOR. That is all.

Mr. DEMPSEY. I see that while the commerce was larger in 1915 and 1916, the 1919 commerce was larger than the 1917 or 1918.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Pretty nearly twice as large as in 1918.

Mr. SMALL. The river serves the city of Fredericksburg, and has comparatively a large commerce, 168,000 tons.

Mr. TAYLOR. Yes, sir.

Mr. DEMPSEY. Is the valley of that river a very rich agricultural country?

Mr. SMALL. Yes.

Mr. DEMPSEY. That is what I supposed.

Mr. SMALL. It has not been developed to the extent that it should have been, but naturally it is rich.

Mr. DEMPSEY. How large a place is Fredericksburg?

The CLERK. The 1920 population was 5,882.

Mr. DEMPSEY. How far up, General, is the river navigable? To this project depth, is it beyond Fredericksburg at all, or just to Fredericksburg?

Gen. TAYLOR. Only to Fredericksburg.

Mr. DEMPSEY. What do you say about the amount, General?

Gen. TAYLOR. I think it should be given.

#### PAMUNKEY RIVER, VA.

Mr. DEMPSEY. Now, the next item is Pamunkey River, page 551. That is a case of cleaning out shoaling of a completed project?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The tonnage there is comparatively small, 31,000 tons.

Gen. TAYLOR. There has been little money spent on that project for several years past.

Mr. DEMPSEY. But it seems to be of rather diversified products?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you say as to that?

Gen. TAYLOR. I think it should be given.

Mr. DEMPSEY. What is the length of the improvement there?

Gen. TAYLOR. From Bassett Ferry to the mouth, 50 miles. Another thing you will notice, there are no very good railroad facilities in that section.

#### NORFOLK HARBOR AND CHANNELS, VA.

Mr. DEMPSEY. The next is Norfolk Harbor, Va.

Mr. SMALL. There are three projects consolidated into one group called Norfolk Harbor, Thimble Shoal Channel, and the channel to Newport News.

Mr. DEMPSEY. The first item is \$50,000 for maintenance, and \$1,000,000 for further improvement of Norfolk Harbor proper, details of which are shown on page 565. The first language is, "From the Belt Line Bridge above the Navy Yard to the ocean, a distance

of 31½ miles, a navigable channel not less than 400 feet wide and 35 feet deep at mean low water, completed in 1912."

Is the navy yard on both sides of the channel?

Mr. SMALL. It is on the Portsmouth side, on the southern branch.

Mr. DEMPSEY. Where is the Thimble Shoal?

Gen. TAYLOR. Approximately five miles outside of Fort Monroe. The channel through the shoal itself is a little over three miles long. So that the outer end of the Thimble Shoal Channel is something like eight miles from Fort Monroe.

Mr. DEMPSEY. Then, from the east of Thimble Shoal, between the headlands of the Maryland and Virginia shores, you do not have to make any improvements at all?

Gen. TAYLOR. No, sir; there is nothing in there at all.

Mr. DEMPSEY. You start at the east end of Thimble Shoal, about 8 miles east of Fort Monroe, and go west to the headlands between Fort Monroe and Norfolk, and into what you call a inner harbor?

Gen. TAYLOR. Yes, sir; what is known as Hampton Roads.

Mr. DEMPSEY. What do you call this; is this the main harbor?

Gen. TAYLOR. That is the Norfolk channel, Elizabeth River.

Mr. DEMPSEY. What is the 40-foot channel?

Gen. TAYLOR. The channel leading from the navy yard to Hampton Roads and on out to sea, through Thimble Shoal.

Mr. DEMPSEY. To the east end of Thimble Shoal?

Gen. TAYLOR. To the east of Thimble Shoal; yes, sir.

Mr. DEMPSEY. That is being dredged at the request of the Navy?

Gen. TAYLOR. That is at the request of the Navy, principally, if not entirely.

Mr. DEMPSEY. Now, I see you had a depth from the ocean to the Belt Line Bridge, southern branch, of 40 feet. Where is the Belt Line Bridge?

Mr. SMALL. Above the navy yard.

Mr. DEMPSEY. How far from the navy yard?

Gen. TAYLOR. It is a very short distance—a thousand yards or less than half a mile.

Mr. DEMPSEY. The 40-foot channel extends to the bridge?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, let us see; you have on hand to the credit of this project just about half a million dollars, have you not—\$238,000 in cash and \$283,000 in outstanding contracts?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. May I ask a question right there?

Mr. DEMPSEY. Go ahead, Mr. Small.

Mr. SMALL. General, in view of the fact that this estimate of \$1,000,000 is all to be used in widening the 40-foot channel, principally on the southern branch of the Elizabeth River, for the benefit of the Navy, may I ask how urgent is the work of widening that channel, and whether that appropriation could be reduced without any decided impairment of the usefulness of the navy yard?

Gen. TAYLOR. Personally, I should not regard it as very urgent at the present time. The Navy Department may take a different view from that. But it seems to me that with the channel of the dimensions that we have up there, it is not as urgent—

Mr. DEMPSEY. Tell us what the dimensions are so that we will have it on record.



Gen. TAYLOR. We have from the Belt Line Bridge to the navy yard a channel 40 feet deep at mean low water, and 250 feet wide; from the navy yard to the junction of the southern and eastern branches of the Elizabeth River, 40 feet deep and 375 feet wide; from the junction of the southern and eastern branches to Hampton Roads, 40 feet deep and 250 feet wide. That is, the minimum width of the 40-foot channel is 250 feet.

Mr. SMALL. The greatest depth being opposite the navy yard.

Gen. TAYLOR. There is also a 35-foot channel at least 400 feet wide, and a 30-foot channel 600 feet wide, and a 30-foot channel from Hampton Roads to Lambert Point and from Lambert Point to the junction of the eastern and southern branches for a distance of 3 miles, 800 feet. On the eastern branch we have a channel 500 feet wide and 25 feet deep.

Mr. SMALL. On the western branch how much?

Gen. TAYLOR. On the western branch 24 feet deep and 300 feet wide to the first bend below West Norfolk Bridge, a distance of about three-quarters of a mile, and from there on up the same depth, 200 feet wide to the bridge.

Mr. DEMPSEY. General, to make plain what I did not understand before, at the bottom of page 557, it appears that a 40-foot channel extends from the navy yard to the ocean, and it is simply a question of variance in width?

Gen. TAYLOR. That is all.

Mr. DEMPSEY. And the million dollars would be to increase that, to make the width the entire distance 800 feet?

Gen. TAYLOR. That is right; yes, sir.

Mr. DEMPSEY. Now, there is not any point, is there, where two vessels could not pass abreast?

Gen. TAYLOR. It would be pretty close quarters for two very large vessels to pass in that 250-foot width. There is room enough, with careful navigation, to pass, but take two battleships, for instance, it would be a close shave.

Mr. DAVIS. It does not occur very often.

Gen. TAYLOR. It would not necessarily occur at all.

Mr. DEMPSEY. I think we understand what there is to that.

Mr. SMALL. What is the least sum consistent with the interests of that port, including the navy yard, to which that estimate of \$1,000,000 could be reduced?

Mr. DAVIS. All of it.

Mr. SMALL. He has not said that yet.

Mr. DAVIS. Pretty nearly.

Mr. DEMPSEY. Is not that just a question whether under existing conditions, with that 40-foot depth, with the widths which you have specified, those widths should be increased so as to make a uniform width of 800 feet?

Gen. TAYLOR. Yes, sir. Even the million dollars will not entirely complete the project. We are taking it off in slices. If you give us a million dollars we can take off a wider slice than if you give us \$500,000 or \$300,000. In other words, we can use toward that project whatever sum Congress gives us, and it merely fixes the rate at which the project will be completed, that is all.

Mr. DEMPSEY. Now, so as to make it plain on the record, without the aid of maps, when we come to a discussion of it, what part, speak-

ing approximately, is 250 feet wide between the navy yard and the ocean, and what percentage of that distance is more than 250 feet? In other words, give us just approximately the distance and the width between the navy yard and the ocean.

Gen. TAYLOR. The wide portion from the Belt Line Bridge to the navy yard is 450 feet wide; that is only a short distance, probably a half a mile. The next section, which is 375 feet wide, leading from the navy yard to the junction of the southern and eastern branches of the river, is approximately  $1\frac{1}{2}$  miles. From the southern and eastern branches to Hampton Roads, 250 feet wide, would be upward of 10 miles.

Mr. DEMPSEY. Now, is there anything more on Norfolk?

Mr. DAVIS. Except maintenance?

Mr. DEMPSEY. Well, what do you say about the \$250,000 for maintenance?

Gen. TAYLOR. I think we should have that, undoubtedly.

#### THIMBLE SHOAL CHANNEL, VA.

Mr. DEMPSEY. Thimble Shoal Channel, page 561, is a case where you have a 35-foot channel, and of the project width 500 feet, and that 35-foot channel has been dredged to 40 feet depth for a width of 400 feet. The 40-foot channel is to be dredged to a width of 750 feet, and the project is 60 per cent completed?

Gen. TAYLOR. Yes, sir. I think it is more important that we should have that money for continuing that work than it is for continuing the work in the inner harbor. We find from recent surveys—surveys which were made since the annual report was submitted—that there has been some shoaling in that channel, and that we have not as good a condition there as we thought we had, not quite. The work is being done by a sea-going hopper dredge, the *Chinook*, which we brought around from the mouth of the Columbia River. If we do not have that appropriation, it will be necessary to lay that dredge up. I know of no other place at the present time where we could use that dredge.

Mr. DAVIS. Could you do this work with one dredge?

Gen. TAYLOR. Yes; it is the largest dredge that we have. It is a dredge that carries about 3,300 yards at a load. She has a pumping equipment of two 30-inch pumps and two 20-inch pumps, a very powerful dredge, and to send her back to the Columbia River would be a very expensive undertaking. To tie her up would cost considerable money, also.

Mr. DAVIS. Can not it be used in other parts of New York Harbor?

Gen. TAYLOR. No, sir; she is not well adapted to work in New York Harbor. We can do it much cheaper up there by other dredges.

Mr. DEMPSEY. Turn to page 562, where you estimated in June that the monthly cost of that dredge would be \$30,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I see that you have in cash \$38,000 and outstanding contracts of \$338,000, about \$376,000.

Gen. TAYLOR. The principal item of that outstanding liability is a bill that we owe to the navy yard for repairs on the dredge, and

we have only barely enough to run the dredge for a month. If the appropriation does not become available, or, at least, if there is no probability of obtaining it from the appropriations in this bill, we will be obliged to tie that dredge up at the end of January.

Mr. DEMPSEY. The estimate for Thimble Shoal is for this purpose, is it not? The project in Thimble Shoal is for 40-foot depth with 750 feet width. You have now a 40-foot depth, with an excavated width of 400 feet, and 35-foot depth for an additional 100 feet—page 561?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. So it is getting 5 feet extra for 100 feet—that is, making the 35 feet up to 40 feet—and then getting 200 feet extra in width for a depth of 40 feet, whatever that may be below the water.

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Comparatively, how do you regard in immediate importance the estimate of \$1,000,000 for widening the 40-foot channel, farther up the river, including the southern branch, and widening the 40-foot channel in Thimble Shoal?

Gen. TAYLOR. I regard the Thimble Shoal as more important.

Mr. SMALL. And why?

Gen. TAYLOR. The channel is in a much more exposed situation than the channel in Norfolk Harbor proper. Moreover, our late surveys indicate that probably there is considerable shoaling in the channel, and that we should keep at work with fair rapidity on that channel in order to complete it in any reasonable time. There is more difficulty for instance, in completing that channel in a hurry than it would be in completing the Norfolk Channel. We can only use one type of dredge on the Thimble Shoal Channel, that is the seagoing type of dredge that we have. The Norfolk Channel is work that we let by contract, and we could if necessary put a large amount of plant on that work and finish it up in a hurry.

Mr. DEMPSEY. Anything more, General, on that?

Gen. TAYLOR. No.

#### APPOMATTOX RIVER, VA.

Mr. DEMPSEY. We will pass to the next item—Appomattox River, Va.

Mr. SMALL. That is a group item.

Mr. DEMPSEY. There are two items there grouped together—Appomattox River, \$50,000 for maintenance; and Nansemond River, \$10,000; and \$25,000 for the improvement of Pagan River. You have on hand on the Appomattox, Gen. Taylor, \$115,000, approximately, in cash?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, the tonnage is 300,000 tons, of a value of \$231,000. How can you get any tonnage of as low value as that; it is a sand and gravel proposition, is it?

Gen. TAYLOR. It appears to be; yes, sir.

Mr. DEMPSEY. Almost exclusively, apparently exclusively so far as these statistics go. Now here is another thing. I see on page 573 at the bottom that the work on this improvement has been delayed

pending the performance of certain work to be done by the city of Petersburg and the Norfolk & Western Railroad as a prerequisite to resumption of operations by the United States. Petersburg has done its part and the Norfolk & Western have given assurances of their intention to cooperate.

Gen. TAYLOR. That work has been held up for several years on account of the failure of the local interests to do the work that was required of them. It required certain changes in the tracks of the Norfolk & Western Road and certain changes in the streets in the city. The city authorities and the railroad could not agree upon the work which was to be done by each, and the matter has dragged along for several years. Then, finally a year ago all the conditions were met, and we have recently made a contract for part of the work, part of the Government work, so that all of that work which is outlined in the report may very shortly be done.

The work is intended to divert the Appomattox River water from the portion of the city channel where it caused rapid shoaling. It will be carried around in a side channel, and the harbor of Petersburg will be dredged out, with the result, we hope, of greatly diminished cost of maintenance. It has been several years since any maintenance work has been done, and the channel has shoaled up to such an extent that it is practically unusable.

Mr. DEMPSEY. I see this is entirely the shoaling of a completed project?

Gen. TAYLOR. Yes; it is entirely shoaling, and it is due to the fact, I say, that we have done no work for several years, pending the completion of the work to be done by the city and the railroad.

Mr. DEMPSEY. Taking into account that this is not a commercial proposition, as the statistics show, and secondly that you have \$15,000 on hand—

Gen. TAYLOR. All of that will be required for work other than maintenance.

Mr. DEMPSEY. What will you use that for?

Gen. TAYLOR. Constructing this diversion dam which is to divert the river water from the wharves, where it has caused this very rapid shoaling. If you will notice, there has been nothing expended there for the last five years.

Mr. DEMPSEY. Well, that kind of traffic will not increase much, will it?

Gen. TAYLOR. They have hopes that when this improvement is made and the channel is dredged out so that the river is usable, that they will be able to get boats up and develop real business. They have made earnest representations to that effect. The channel has not been in condition for some time past to enable any other business to be carried on.

Mr. DEMPSEY. Where do you find that estimate as to the diversion dam there?

Gen. TAYLOR. I do not know whether it is given in the report or not. It is given at the top of page 572 in the project. But this is what is to be done: To put in a diversion channel 200 to 300 feet wide and 2½ miles long for delivery of the discharge of the river into the old channel below Petersburg by putting a diversion dam at the head of the navigable channel.

Mr. SMALL. The estimate of the cost is at the bottom of page 573.

Gen. TAYLOR. That states what will be done with the funds already on hand.

Mr. DEMPSEY. That only figures \$66,000 and you have got \$115,000. That is what I am trying to find out. According to that there is still \$50,000 in the fund, in this estimate at the bottom of page 573. Suppose we consider that estimate at the bottom of page 573 is correct. Now, assuming that that is correct and that you have \$50,000 besides funds necessary for the erection of the dam, on hand, what could you do with it on that maintenance problem?

Gen. TAYLOR. If we had \$50,000 over and above the amount necessary to complete the dam, I think that that would be sufficient for maintenance, but we will not have that much left for maintenance next year.

Mr. DEMPSEY. You will investigate that, General, and answer that in your correction of the notes?

Gen. TAYLOR. Yes, sir.

NOTE.—The correct amount on hand and available for maintenance January 1, 1921, is \$42,408.

#### PAGAN RIVER.

Mr. DEMPSEY. The next item is \$25,000 for Pagan River, Va., further improvement, page 576.

Mr. SMALL. Smithfield, on that river, has been made famous by its hams.

Mr. DEMPSEY. Now, I do not quite understand this. I see on page 577, at the bottom of the page, that it is proposed to expend this \$25,000 for improvement of the channel in accordance with the project. As I understood it, there at the bottom of page 576, the 10-foot channel was completed in 1910, resulting in a channel 5 miles long, 10 feet deep, and 40 feet wide from Smithfield to the mouth. Now, what is there remaining to be done to complete the project?

Gen. TAYLOR. To increase the width to 80 feet.

Mr. DEMPSEY. Well, now, that is another question. We have the project depth, 40 feet in width, and you have a tonnage of 23,000 tons. Under those circumstances, how necessary do you consider that item at the present time?

Gen. TAYLOR. I should not consider that as an absolutely essential item.

#### NANSEMOND RIVER, VA.

Mr. DEMPSEY. The next is an item of \$10,000 for maintenance of Nansemond River, Va. It is really one of the streams near Norfolk? I see they have a channel 80 feet wide and 12 feet deep.

Gen. TAYLOR. It had been dredged to that depth, but the controlling depth at the end of the year was only 9½ feet. In other words, there had been nearly 3 feet of shoaling.

Mr. DEMPSEY. And the estimate is for the removal of logs and snags, I take it?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Well, what do you say about that?

Gen. TAYLOR. I think that is necessary.

Mr. DEMPSEY. Any questions, gentlemen?

Mr. SMALL. Suffolk, Va., is on that river.

Mr. DEMPSEY. Are there any questions about those other items?

Mr. SMALL. I think not.

ONANCOCK RIVER, VA.

Mr. DEMPSEY. The next is an item for Onancock River. Is that on the East Shore?

Gen. TAYLOR. Yes; the East Shore.

Mr. DEMPSEY. The existing project is completed, and this estimate is for the removal of shoals, I see. Now, that East Shore of Maryland; has it any railway facilities?

Gen. TAYLOR. The East Shore of Virginia has just one road that extends down the center, down to Cape Charles City, that they call the New York, Philadelphia & Norfolk. It is a branch of the Pennsylvania Railroad.

Mr. SMALL. That does not pass Onancock, though, does it?

Gen. TAYLOR. It passes at a distance, some little distance.

Mr. DEMPSEY. Well I see the tonnage, which is on the increase, is of agricultural products and varieties of fish.

Gen. TAYLOR. Fish and oysters.

Mr. SMALL. It is substantially their only means of transportation.

Mr. DEMPSEY. What do you say as to that?

Gen. TAYLOR. I think that is necessary.

Mr. DEMPSEY. The traffic there was greater in 1919 than it was the previous year, but only a third greater.

Gen. TAYLOR. Yes, sir.

INLAND WATERWAY FROM NORFOLK, VA., TO BEAUFORT INLET, N. C.

Mr. DEMPSEY. The next item is inland waterway from Norfolk, Va. to Beaufort Inlet, N. C., page 589.

Mr. SMALL. Do you think you have made a sufficient estimate for maintenance there?

Gen. TAYLOR. I think so; yes, sir. We have no reason to believe that the deterioration in the channel is going to be rapid.

Mr. DEMPSEY. Besides that, General, I see you have on hand under your inland waterway \$361,000 in cash and \$118,000 in contracts, making a total in all of half a million.

Gen. TAYLOR. Yes, sir.

Mr. SMALL. All that is for further improvement?

Gen. TAYLOR. All that is for further improvement. We expect to apply that to further improvement. That waterway has been completed.

Mr. DEMPSEY. Was it appropriated for further improvement?

Gen. TAYLOR. Yes, sir; but it would be available for maintenance also. But in order that we should make any progress with the project at all, we ought to be able to use all of that money for further improvement. The waterway has been completed from Norfolk to Albemarle Sound. According to the project it then comes up the Alligator River and then crosses overland to the Pungo, which makes a cut across there, and then comes down the Pungo

River across the Pamlico River, and across this little neck into Pamlico Sound, and follows down Pamlico Sound to Adams Creek and down through that into Beaufort Harbor. As I stated, the section from Albemarle Sound is completed, and the section from Pamlico Sound to Beaufort Harbor is under construction and will be completed probably this next summer. We also expect to dredge—

Mr. DEMPSEY. What is the project depth?

Gen. TAYLOR. Twelve feet.

Mr. DEMPSEY. It is a barge proposition?

Gen. TAYLOR. A barge proposition; yes, sir.

Mr. DEMPSEY. And a part of your inland waterway system?

Gen. TAYLOR. Yes, sir. This is an important part from Norfolk to Beaufort. We also expect to maintain a channel through Croatan Sound, which will give us the project depth of 12 feet between Albemarle Sound and Pamlico Sound, so that by next August we will have a completed channel all the way from Norfolk to Beaufort of 12-foot depth.

Mr. DEMPSEY. What is the distance, approximately?

Gen. TAYLOR. Two hundred and one and five-tenths miles.

Mr. SMALL. That is between Norfolk and Beaufort?

Gen. TAYLOR. Between Norfolk and Beaufort. That avoids Cape Hatteras. It goes inside Cape Hatteras, which is quite well known. It enables barges to use the inside route and avoid the ocean in the vicinity of Cape Hatteras.

Mr. DEMPSEY. What do you say about the \$50,000 there, General?

Gen. TAYLOR. I think that ought to be allowed.

Mr. SMALL. Are you through with that? If so, I want to ask a question.

Mr. DEMPSEY. Yes.

Mr. SMALL. General, under that item which reads "Waterway from Norfolk, Va., to the sounds of North Carolina," which is an old project, is included Croatan Sound?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Now, an appropriation was made in the 1919 bill, I believe, to dredge Croatan Sound to a depth of 12 feet and to dredge a short distance in Pamlico Sound?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. In order to get a continuous depth of 12 feet from Albemarle Sound or Pamlico Sound to the mouth of the Neuse River. Have you a sufficient sum on hand to do that dredging?

Gen. TAYLOR. I think so; yes, sir.

Mr. SMALL. Because that channel through Pamlico Sound and across that place in Pamlico Sound is intended to be used pending the completion of the project route?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Up from Albemarle Sound and Alligator River; thence overland to the Pungo River; then to the Bay River, N. C. It is important to have that dredging done in order to have this continuous channel of 12 feet pending the completion of the projected route?

Gen. TAYLOR. I am satisfied the money is sufficient. The reason why there has been so long a delay, is you probably know, is that

we tried to let the work by contract, and we could not find anybody that would do it at what we regarded as a reasonable price, so we have brought around a dredge which was built for the Arkansas River, and she is now in Norfolk getting ready to do the work, and will be ready to work as soon as the conditions are suitable.

She is an exceptional dredge, with a powerful pump, and we think is especially adapted to the work in Croatan Sound. The reason why such high prices were bid was that contractors generally did not have the plant that was suitable for that work. We had great delays in bringing the dredge around. We were several months getting it here from the Mississippi to Norfolk. We got into New Orleans, ran into strikes, and had long delays in getting the outfit, and the tug we had arranged to convoy us had difficulties with its boilers, and got tied up with strikes, and when we got to Key West we ran into a drought and we could not get water and could not get away from there until the rains came.

Mr. SMALL. Approximately, when do you expect to finish that channel through Croatan Sound and Bluff Shoal?

Gen. TAYLOR. The next fiscal year. By next August we expect to have the 12-foot channel from Norfolk to Beaufort.

---

WEDNESDAY, JANUARY 12, 1921.

Mr. DEMPSEY. Gen. Taylor, we will hear your friend, Col. Oakes.

Gen. TAYLOR. Mr. Chairman, in nearly every case when an estimate has been under consideration a comparison has been made between the costs of work at the time the estimates were made, June 30, 1920, and the present, and future estimated costs. In the costs one of the principal items has been coal, and reference has been made several times to the fact that the price of coal is decreasing very rapidly, and for that reason the estimates should be cut down proportionately. I would like to have Col. Oakes, who is the district engineer at Norfolk, give you some of his experiences in purchasing coal in the past two years and at the present time, so that you can get an idea of what we have actually paid for coal during the war, and what we are actually paying at the present time. That will give you a better comparison than anything we have had yet.

#### **STATEMENT OF COL. J. C. OAKES, DISTRICT ENGINEER AT NORFOLK, VA.**

##### **COST OF COAL.**

Mr. DEMPSEY. All right. Colonel, you are the district engineer at Norfolk?

Col. OAKES. The district engineer at Norfolk, Va.

Mr. DEMPSEY. And you have been stationed there how long?

Col. OAKES. About two years.

Mr. DEMPSEY. And during that time have you bought coal for the Government?

Col. OAKES. Yes, sir. I have been running a dredge that has been occupied most of the time on the inland waterway in the vicinity of Beaufort, N. C., from 180 to 200 miles south of Norfolk.



Mr. DEMPSEY. Where does this coal supply come from?

Col. OAKES. It comes from the Virginia mines, and on occasion we have obtained bids from as far west as Wheeling, but we have not had to purchase any that far west.

Mr. DEMPSEY. How is it brought in—over the Norfolk & Western?

Col. OAKES. Probably mostly over the Norfolk & Western, but we ask for bids from dealers in Norfolk, and then, of course, accept the low bid. There was a stringency when so much coal was being exported, and on one occasion we got bids as high as \$22.75.

Mr. DEMPSEY. For what kind of coal?

Col. OAKES. For soft coal, steam coal. But I refused to buy, as that was something like \$7 or \$8 more than I had paid before, and I was able to tide over the emergency and did not purchase any coal that cost more than \$13.75 delivered at Beaufort. I was always able to find somebody among the dealers in Norfolk who would sell me coal at what was a reasonable price, considering the export price. The price of coal now has decreased, so that my last bids are \$11.75 at Beaufort, delivered. We had one bid of \$9 a ton at the mines, but on investigation we found that the freight rate would wipe out the difference between the \$9 at the mine and \$11.75 delivered, with some possibility of doubtfulness about the rate, so I accepted the \$11.75. That was my last contract.

Mr. DEMPSEY. Now, Colonel, my home is in western New York. A week ago to-morrow, the day before I left there, I was talking with one of our local manufacturers, and he told me that his present rate on soft coal for manufacturing purposes was \$9.75, and he said that was made up of the transportation and the price of the coal. As I remember it, he said the price of the coal was \$3.75, and the rest was transportation; that they purchased the same coal before the war at about \$2, either \$1.75 or \$2; and that there was that difference, being pretty nearly double, and that the balance was made up of the increased freight rates allowed by the Interstate Commerce Commission. Of course, there is no immediate hope of reduction of transportation costs. I do not see any hope for some time, as transportation costs are made up of the return on the capital invested and the payment of wages. Wages have been increased, and I see no prospect of a reduction on the cost of railroad transportation, do you, Mr. Small?

Mr. SMALL. I do not. I see no prospect of decreasing the cost of coal to the consumer except by a larger use of our waterways where they are usable.

Mr. DEMPSEY. But I can not understand why the price of coal in North Carolina should not be at least a dollar or two cheaper than in western New York. You are very much nearer to the soft-coal fields than we are. You have the soft-coal fields right at your door there.

Col. OAKES. Of course, it is difficult to explain inconsistencies of that kind. I simply can state the facts. I do not expect to be able to buy coal delivered at Beaufort, for instance, in this next year for less than \$8 and \$8.50. That I would consider a very reasonable price.

Mr. DEMPSEY. I think you are right about that.

Col. OAKES. So that I think I can say that the reduction in price during this past year on coal would be from \$13 to \$8.50, or about \$5.

Mr. DEMPSEY. A little over a third.

Col. OAKES. A little over a third. And that is the best I believe that you can expect during this next year.

Mr. DEMPSEY. I think you are right.

Col. OAKES. That is owing not only to the high cost of transportation, but also to the increased cost of labor in the mines. The miners are getting a very much higher price on the coal than they were three years ago, probably three times as much. Coal was formerly mined and delivered at Louisville at \$1.10 a ton, and that now costs \$4 or \$5 a ton.

Mr. DEMPSEY. There is a fight in West Virginia over that question of wages?

Col. OAKES. Yes.

Mr. DEMPSEY. Those mines are being operated very slightly?

Col. OAKES. They are being operated to a certain extent, but not full blast.

Mr. DEMPSEY. So far as those mines are concerned, they are going to be affected the same as wages generally, in my judgment. It is only, so far as I can see, on the transportation systems of the country, the railroad systems of the country, where there is no present likelihood of a decrease in prices.

Col. OAKES. That extremely high price for steam coal of \$22.75 in Norfolk I do not think should be considered at all as a price to apply in this country. I do not believe anybody paid that here. The people that had industries, that needed coal, I am sure all got their coal for about the price I did, ranging from \$11 to \$13, but any export coal was grabbed by those people for use in Europe, and those people would pay any price if they could get coal. They would pay from \$25 to \$35 a ton in France or Italy for all the coal they could get hold of. At the same time we got this bid of \$22.75 in Norfolk I bought coal for \$13.75 delivered at Beaufort, because they were not exporting any coal at Beaufort, but they were at Norfolk.

Mr. DEMPSEY. We are very much obliged to you.

#### COST OF LABOR.

Gen. TAYLOR. There is one other principal item that goes into the cost of operation, that is labor. I would like to ask Col. Oakes what experience he is having with labor on his dredges, whether the price of labor, for instance, on his hopper dredge—the *Chinook*—has gone down any?

Col. OAKES. No; the price of labor on all floating plant is practically determined by the Shipping Board rates. They established these rates and they are for common labor—seamen and wipers and enginemen, and things like that—about three times what they were before the war.

Mr. DEMPSEY. Of course, you are aware that the Shipping Board program has been pretty well wiped out, and that the policy of Congress does not seem to be to continue the Shipping Board. It is for just such illustrations that you are giving.

Col. OAKES. Exactly; and this is to be said in that respect, that while ultimately the cost of labor for common sailors will be de-

creased some, it can not be expected to decrease rapidly, because they have now tasted the benefits of the higher wages and have just refused to work for anything less. I have had experience on my pipe-line dredge within the last three months. There was one month that I know I sent over 50 firemen from Norfolk down to that dredge, and did not maintain a crew. We did not maintain a crew for over a month. The firemen would leave us, saying they did not care for the job, and then quit. The conditions have been improved very much during the last couple of months.

Mr. DEMPSEY. You notice that every big transatlantic steamer, every big passenger steamer plying between New York and foreign ports has been tied up?

Col. OAKES. Yes.

Mr. DEMPSEY. For lack of business. Is not that going to have some effect, that kind of thing, going to have some effect, for instance, as you saw in the woolen mills two or three days ago.

Col. OAKES. Yes; ultimately, if the condition continues, but these people will lay off six months rather than work for lower prices, so that the decrease in labor costs is going to be very slow. If decreased 20 per cent by the end of the year I would think that that is all that we could expect it to do.

Mr. DAVIS. At the end of the fiscal year?

Col. OAKES. No; a year from now, January, 1922. For instance, if I were to announce a cut in wages on my dredge to-day, the whole crew would quit. I might be able to find another crew after great difficulties that would come in at the decreased wages with a loss of \$20,000 to the Government by tying up the dredge. It would cost about \$25,000 a month to run the dredge, with a loss of 20 days to the Government, which would be a loss of \$15,000 to \$20,000 in trying to decrease \$5 a month on the labor, so that the present condition would not allow me to reduce the wages paid to the common laborer on board the floating plant that I have in my district.

Mr. SMALL. Are the members of your crew in the civil service?

Col. OAKES. Certain ones are, above a certain price. The deck hands are not.

Mr. SMALL. Is the compensation of those under the civil service limited by law in any way?

Col. OAKES. Yes, sir; for certain classes. And another thing is true in the civil service—I can not reduce a man who is in the civil service without permission. I have to get authority if I want to reduce a man's salary; the salary of a man who is in the civil service. I have got to show cause and get authority so to do. So that the whole operation is very slow, and, as I say, I think that cutting the total expenses of running a dredge 20 per cent during this next year will be as much as I could expect.

Mr. SMALL. These high wages you pay are so-called union wages, are they not?

Col. OAKES. Yes, sir.

Mr. DEMPSEY. Well, they are war wages even more than union wages?

Col. OAKES. They have been adopted, and they have been adopted by the unions, and the unions are making a fight to keep them.

Mr. DEMPSEY. As I understand it, there are about 3,000,000 men in the country out of employment now. I suppose Norfolk has its proportion of that 3,000,000.

Col. OAKES. If they have, I have not seen many of them that want employment. There may be a lot that are loafing, but they do not seem to want employment. I have had great difficulty, for instance, in getting 20 to 30 men to work at Fort Story, which is 12 or 15 miles from Norfolk on the interurban. It is almost impossible to get a crew of 15 men to work. They will go down and work one or two days and then quit or lay off.

Mr. DEMPSEY. But you want to remember that the conditions are changing from day to day, and what was true 30 days ago is not true to-day.

Col. OAKES. As I say, you read these things in the papers and you see that there are 3,000,000 men out of work. But those 3,000,000 men are not ready to go to work under the new conditions. It will take some time, of course.

Mr. DEMPSEY. In my town practically every factory is closed down.

Col. OAKES. That, of course, makes a big difference where a factory closes down in a factory town. Unemployment shows more quickly in a town of general manufacturing than a place like Norfolk or any port.

Mr. SMALL. My information leads me to the same conclusion with Col. Oakes in this respect, that the pay of men on steamers and vessels, both coastwise and foreign, will be about the last to decline.

Col. OAKES. Yes, sir. The organization is very strong, and there are very strong influence that will make those wages decrease very slowly, I think.

Mr. SMALL. They will not permit anyone to work unless he belongs to the organization. That is correct, is it not?

Col. OAKES. Yes, sir; generally. Of course, we do not recognize them in our Government service, but we have to meet the wages that the other people recognize, of course. Otherwise we can not get them.

Mr. SMALL. You have to meet them indirectly in that those whom you can employ are restricted to those who belong to the organization?

Col. OAKES. Yes.

Mr. DEMPSEY. What he says is that the Government does not recognize that condition. It may operate, but he does not recognize it.

Col. OAKES. It affects our operations, but we do not recognize the unions, are supposed not to recognize their scale of wages, but in effect it makes us do so because we have to meet the pay that the other people are paying, otherwise we can not get them.

Mr. DEMPSEY. Thank you very much.

Gen. TAYLOR. The point I wanted to bring out was that it would not be safe to very greatly reduce the estimates that have been submitted simply on the ground of decrease in cost of labor and fuel, at the present time.

Mr. SMALL. That applies to the contract work as well as to the Government plant, General?

Gen. TAYLOR. Certainly; it must.

## DUNKIRK HARBOR, N. Y.

Mr. DEMPSEY. If you gentlemen will let Mr. Reed take up his matter a moment, then we will take you next. He has something coming up on the House floor. Perhaps, General, you can outline Mr. Reed's item and tell us what the conditions are first. Maybe the conditions are all right.

Gen. TAYLOR. The item I think that Mr. Reed is interested in is Dunkirk Harbor, N. Y. The project for this harbor includes two breakwaters, the west breakwater and the east breakwater, an entrance channel and an interior anchorage basin. The breakwaters were completed a number of years ago with timber cribs. Since they were completed, there has been considerable deterioration, the cribs have rotted and have been beaten to pieces by the waves. Last year we had an appropriation for repair of the west breakwater. With the money available we placed a concrete cap on that breakwater, and that breakwater is in good condition.

The east breakwater, which protects the greater portion of the harbor, is still in a very dilapidated condition, and in times of storm the waves go over that breakwater and are tearing the breakwater to pieces and the result will be that unless an appropriation is made within a reasonable time, that breakwater will be so torn to pieces that it will be very expensive to repair. I doubt very much if there will be much of the superstructure left. It also causes more or less shoaling of the harbor. There is an item in the estimate for funds to make that repair.

Mr. DEMPSEY. I take it, Mr. Reed, that you do not seriously object to that estimate being allowed?

Mr. REED. No, indeed.

Mr. DEMPSEY. Now, you can say anything to the committee that you want in addition to what Gen. Taylor has said.

**STATEMENT OF HON. D. A. REED, REPRESENTATIVE IN CONGRESS FROM NEW YORK.**

Mr. REED. I just want to call the committee's attention to one item. You will find in the 1920 report of the Chief of Engineers, page 1683, under the title "Local Cooperation," that some years ago the Government made an appropriation to remove a certain ledge of rock to enable us to use that harbor, but made that appropriation contingent on the people of the town building a dock which would meet with the approval of the War Department, costing at least \$100,000. The firm of Reed & Snow, of which I happened to be a member at that time, conducted a legal battle for the city to acquire the site. They finally acquired it, and the city built the splendid municipal dock, and they are ready to go out after factories, to get factories to come to the town, and they want to get shipping. But the Government program has been behind all the time. First that ledge of rock prevented the transportation companies from coming in with their boats and making the swing into the harbor. Now, that the war is over, we find the breakwater all to pieces and the waves throwing the sand and mud over into the harbor. A conservative estimate, I would say, would be from \$50,000 to \$75,000 to remove this accumulation for a year, so it is a

matter of economy to allow this item. I am going to submit some letters from prominent industries in our town that want to use this harbor for shipping purposes. Then I have letters urging the Government to repair the breakwaters, letters from the leading transportation companies of Buffalo and Cleveland.

I call the committee's attention to the fact that while this does not show much commerce yet one company produced from our fishing docks 1,732,300 pounds of fish. That was one company. We have produced from our harbors 3,000,000 pounds of fish a year.

There is a large number of docks there. It is a harbor of refuge, and I want to call the committee's attention to the fact that the Buffalo Harbor is becoming so congested that they are trying to get facilities at North Tonawanda, and that we are the only harbor between Buffalo and Erie where the Government has spent considerable money.

The city of Dunkirk has done its part, has provided railway facilities down to the dock without switching charges, and they are planning now and are working on the project to open up our dock to the coal fields of Pennsylvania over the D. & V. P. and the Pennsylvania Railroad. We expect to utilize the New York Barge Canal to place that coal on these barges in New York City and along the New England coast.

Now, with that statement and the submission of these letters, which I wish you would take the time to glance through, because they are from the leading transportation companies and the organizations and industries both of Dunkirk and Detroit, Mich., who are anxious to use the facilities of this harbor when it is put in shape so that the transportation can get in there.

#### **STATEMENT OF HON. CARL VINSON, REPRESENTATIVE IN CONGRESS FROM GEORGIA.**

##### **SAVANNAH RIVER BELOW AUGUSTA, GA.**

Mr. VINSON. I will consume but a few minutes of your time. This project is the Savannah River below Augusta, Ga.

Mr. SMALL. Between Augusta and Savannah.

Mr. VINSON. Mr. Chairman, in 1910, under the river and harbor bill, a project was adopted providing for certain kind of revetment and riprap work for 20 or 25 miles below the city of Augusta on the Savannah River. (See House document No. 962, 60th Cong., 1st sess.) In 1915 that project was completed. Now, I am asking that \$38,000 be appropriated for the mere maintenance of the project that was completed in 1915. In 1919 Senator Smith of Georgia was able to have incorporated in the river and harbor bill, when it was in the Senate, an item for \$50,000 for maintenance, and now this additional item of \$38,000, which I am asking for, is to complete the maintenance which was undertaken by the \$50,000 appropriation.

Now, the particular part for which I desire this maintenance is at a place on the river known as Canoe Cut, about 7 or 8 miles below the city of Augusta, shown on this map from the point D to the point A on the map which was prepared by the district engineer. In order to protect the project of 1915 the \$50,000 that was appropriated

has been used between D and C, to protect this river and to keep further erosion of the project that was completed in 1915. The \$50,000 has already been used. Now we ask for \$38,000 to be used from Y to A for the maintenance of the project and to protect the \$50,000 that has been spent.

Mr. DEMPSEY. Is that the item for which there is an estimate of \$36,500?

Mr. VINSON. No, sir; that \$36,500 does not embrace this, because you will see by the estimate that that is for the operation of one Government snagging boat for about 10 miles and for care of all plant and repair of walls and dock and office expenses, \$13,500. In addition to this \$36,500 we are asking for \$38,000 for the maintenance of the project that was completed in 1915.

Mr. DEMPSEY. Now, what I am trying to do is to find out which project this is.

Mr. VINSON. It is the project that I have just referred to. A project that was adopted on June 25, 1910, a project providing for the improvement of 20 or 25 miles of the Savannah River immediately below Augusta. It is in House Document No. 962 of the Sixtieth Congress, first session.

Mr. DEMPSEY. That is not in the Book of Estimates at all?

Mr. VINSON. No, sir. The estimate now does not include any maintenance for this project.

Now, you see, Mr. Chairman, the \$50,000 for maintenance that has just been spent—that is referred to in the Engineer's report, which shows how it was spent—will be absolutely destroyed unless the maintenance is carried on, and it only requires, according to the district engineer, approximately \$38,000 to do this.

Now, in 1915 the revetment was carried on at this place—Canoe Cut—and at that time they thought it was sufficient, but since 1915 water has gotten behind the revetment and has eroded the bank to the extent of 150 feet behind the revetment, and on the bank of the river approximately 150 or 200 feet from the river as it stands now the city has its levee. Therefore the levee of the city, which cost approximately \$2,000,000, is absolutely jeopardized unless the erosion at this place is stopped. These figures on this map will show you exactly the situation. This was the revetment in 1915. Now, you see how the water has eroded. The \$50,000 was spent along the river front to protect this revetment. The water is now behind the revetment here [indicating]. If this erosion is not stopped, the levee on the top of the bank will be destroyed.

Mr. SMALL. Is that revetment at the city of Augusta?

Mr. VINSON. That is below the city of Augusta. This was the project of 1910, which was completed in 1915, and you see from the photographs that that water is 150 or 200 feet behind the 1915 completed project. Now, I am asking for \$38,000 to protect that particular point by placing the revetment behind the water instead of having it in front of the water. This photograph shows the revetment here, shows how the water is behind the revetment and how the erosion has taken place.

Mr. DEMPSEY. That would not seem to indicate any washing away of the bank.

Mr. VINSON. I would like to know what this is but the bank.

Mr. DEMPSEY. I know, but that seems to be covered with brush.

Mr. VINSON. Brush and grass. Here is the bank.

Mr. DEMPSEY. It would rather indicate that the bank was stationary.

Mr. VINSON. No, sir; the quality of the soil is so alluvial that it is easily eroded, and the Government engineer's report bears that out. They sought to prevent the erosion in 1915. Now, this project here from D to C, for which \$50,000 has just been spent, is protected; this portion, C to A, is absolutely at the mercy of the water unless it is stopped.

Mr. SMALL. Under the paragraph "Proposed operations," which, of course, is of June 30, 1920, page 701, it is stated:

It is proposed to expend the funds available on June 30, 1920, for maintenance in bank-protection work at Canoe Cut by Government plant and hired labor, including the cost of office expenses, contingencies, etc., practically exhausting the available funds as of December 1, 1920.

Has that work been done?

Mr. VINSON. Yes; that is the \$50,000 carried in 1910. Now we are asking for \$38,000 more for further maintenance to complete what was undertaken. That \$50,000 did not do the work. Now, you understand, Mr. Chairman, that this is not a new project. It is a maintenance project adopted in 1910.

Mr. DEMPSEY. But I invite your attention, as Mr. Small has, to page 701, and it seems to me that Gen. Taylor will know the work done there. Mr. Small has called your attention to this paragraph—is this Canoe Cut?

Mr. VINSON. It is Canoe Cut.

Mr. DEMPSEY. They say: "It is expected that additional funds will be required for the three months April, May, and June, 1921, and for the fiscal year ending June 30, 1922." Then they say: "Operation of one Government snagboat"——

Mr. VINSON. That is a different thing.

Mr. DEMPSEY. "Repair to training dikes, \$8,000."

Mr. SMALL. Mr. Vinson, as I understand it, contends that the amount which was available June 30, 1920, was not sufficient to complete the work of maintenance at Canoe Cut, as the engineers anticipated, and therefore he wishes this additional amount to complete that work of maintenance at Canoe Cut.

Mr. DEMPSEY. I understand; but the engineers would seem on that to have estimated for this year, and while the amount is small, it would seem to have been estimated for the same work.

Gen. TAYLOR. May I interrupt to say that there was no estimate in the report for this work. That "training walls and dikes" refers to other training walls and dikes in the river. This is a special re-vestment. There is a system of training walls and dikes extending a good many miles below Augusta to keep the channel of the river from spreading out over the shoals. I have a letter here, dated November 15, 1920, which explains this situation, and perhaps it would enlighten the committee if I should read this letter and the indorsement on it.

Mr. DEMPSEY. Read such portions, or testify to it, as you prefer, Gen. Taylor.

Gen. TAYLOR. I think perhaps I had better read portions of the letter. It is dated Savannah, Ga., November 15, 1920, from the dis-



trict engineer to the Chief of Engineers. Subject, additional bank protection at Canoe Cut, Savannah River. After describing the levee he states:

It will be observed that this work is immediately in front of a levee. This levee is about 8 or 10 miles long, extends several miles below this point, and was built by the city of Augusta at a cost of \$1,750,000 as a protection against floods. This causes a special interest of the city of Augusta in the matter of protection of the bank at Canoe Cut.

Fifty thousand dollars was provided by the 1919 river and harbor act, and is being used for paving the bank from D to C and as much farther upstream as possible. The work is being done by hired labor and is progressing satisfactorily, and it is thought that it will cover the bank from D to a point indicated on the map by a spur dike and marked "point No. 1," and which is just above point C. From point No. 1 to B the bank is still caving moderately, and as seen on the ground gives the appearance of having washed back since the spur dike was placed more than the drawing indicates. The drawing should properly show in each case a decided bow in the crest of the bank between adjacent spur dikes. These spur dikes are remnants of a previous effort to protect this bank.

The present work is costing this office about \$40 a running foot and there are about 950 additional feet estimating upstream to B which should be protected. The cost of this would be \$38,000.

I did not request any money in the annual report for this work because of the need for economy, and I thought this bank would hold until funds could be obtained from the following river and harbor bill. I am still of this opinion, but it would be convenient and economical if the money could be obtained in the next river and harbor bill so that our hired labor force would take up and complete the work by the time they finish the paving now provided for. And, of course, there is always some uncertainty as to how fast the bank will wash in the next two or three years, so that it would undoubtedly be advantageous to get the money in the next river and harbor act.

The division engineer, Col. Cosby, in an indorsement dated November 18, 1920, states:

During the past two years there has been practically no commerce on the Savannah River through Canoe Cut, with the exception of a few logs. Until there is an actual revival of navigation on this section of the river, and unless it can then be shown that additional bank protection at Canoe Cut is needed to maintain the project depth of 5 feet, it is believed that no further work at this point should be done when that now under way is completed. It does not appear that the proposed work is necessary at this time in the interest of navigation.

Mr. SMALL. Did the district engineer make any estimate of the amount that would be advisable?

Gen. TAYLOR. He estimates it would be 950 feet and it is costing now \$40 a foot, so that the amount required would be \$38,000. The view of both the division and the district engineers is that the work is for the protection of the levee, and the levee being a city affair, it is the duty of the city to provide further conditions for the protection of this levee at this time.

Mr. VINSON. On that I disagree, for the reason that the Government is committed to the policy always to protect that which it constructs. Now it is sought to do that by the river and harbor bill of 1919, for that bill carried \$50,000 for the protection of this bank. Therefore you could not say that the Government, having appropriated \$50,000, is going to take the position that it is a local proposition to protect the levee and to prevent erosion, which necessarily would interfere with commerce. Now, the reason why there is no commerce on the river at this time is due to the fact that since the war the ship lines have been out of business, and the money condi-

tions have been such that we have not been able to reorganize and start again. But prior to the war there was considerable commerce on the river. We are asking that the Government continue to maintain the project that we undertook in 1910.

Why of course in one sense it does protect the levee because necessarily where the bank is built up for any purpose, it necessarily has a tendency to make the levee just that much stronger. If the committee should conclude that it is a local project it would be beyond my comprehension, when the committee has committed itself to the policy of appropriating \$50,000 to do this kind of work, and it is nothing in the world but a Government project carrying out the act of 1910.

I think Gen. Taylor will agree with me that the Government is committed to the policy of protecting the work it has already done.

I certainly hope that this committee will see fit to take into consideration the question of economy and not throw away the \$50,000 that we have already spent there. It certainly would be false economy to appropriate in 1919 \$50,000 and in 1921 abandon the \$50,000 breakwater and let it be washed away. That certainly would not be economy. It would be economy to go ahead and finish the whole project as contemplated when the act was first enacted in 1910.

Mr. DEMPSEY. Does anyone else desire to be heard?

Mr. VINSON. No, sir; that is our case.

Mr. DEMPSEY. Any questions, Mr. Small or Mr. Davis?

Mr. DAVIS. It is only a question of policy, as I see it, whether the Government does that or the local authorities.

Mr. VINSON. Mr. Davis, it is a question of policy to which the Government is committed. You established this project. The question is when the Government established an enterprise, is it to maintain it?

Mr. DAVIS. I am not committing myself. My mind is not made up.

Mr. VINSON. It is just as much a duty of the Government to maintain this work as it is for the Government to maintain a post office building after it has built the same. We asked you to maintain the act of Congress of 1910.

Mr. DEMPSEY. We have abandoned a great many post offices in my country.

Mr. VINSON. They abandoned those because people were moving away. They do not abandon them because of expenses.

Mr. SMALL. It looks rather late, Mr. Chairman, to take the position that this is not a Government activity there because even during 1920 the available funds were spent on it.

Mr. VINSON. Why certainly.

Mr. SMALL. And it seems to be a question, the same question that was raised by the district engineer's office, rather as to how urgent it is. That is the crux of the situation rather than the liability of the Government.

Mr. VINSON. Surely.

Mr. SMALL. If it is sufficiently urgent, they ought to have an appropriation. If in the interest of economy it can wait over for another bill, it ought to wait.

Mr. VINSON. Right on that point, Mr. Small, I would like to call attention to the fact that this erosion is over 150 feet since 1915,

and with the great volume of water coming down Savannah River, and this is in the elbow of the river, heading in such places with such a velocity necessarily makes erosion year by year greater and greater, and it occurs to me that it has such urgency that it should be appropriated for at this session.

I thank you, gentlemen.

Mr. DEMPSEY. We are very glad, indeed, to have heard you, Mr. Vinson.

**STATEMENT OF HON. JAMES W. OVERSTREET, A REPRESENTATIVE IN CONGRESS FROM GEORGIA.**

SAVANNAH HARBOR, GA.

Mr. DEMPSEY. Now, Mr. Overstreet, you may proceed.

Mr. OVERSTREET. Our item is Savannah Harbor, found on page 692, I think it is.

We have this afternoon a small delegation from Savannah, consisting of Mr. John L. Cabell, who represents the mayor of Savannah; Maj. W. W. Williamson, who represents the board of trade; and Mr. Thomas Purse, who is secretary of the board of trade.

Some of these gentlemen desire to say a few words in behalf of this proposition, and I will only briefly call the committee's attention to some facts and leave the main arguments to be made by these gentlemen.

I will state in the beginning that we desire to thank you very much for allowing us this opportunity to be heard. We understand that it has been the policy of this committee not to allow public hearings, because you have not had time to do it. I told Mr. Dempsey a few weeks ago that I was desirous of having this Savannah delegation appear before this committee on behalf of Savannah, and he thought that we could have that privilege, but recently the committee took a different view of the matter, but suggesting that I could have the opportunity of appearing before you this afternoon.

Now, gentlemen, two of you, Mr. Small and Mr. Dempsey, have been members of this committee for a number of years, and you are familiar with Savannah Harbor, and you are familiar with the needs of this harbor. Mr. Davis has not been, and so is not so familiar with the harbor and its immense commerce.

We will not detain you by telling you of the amount of the commerce, because you are familiar with it. You know that Savannah is a large and growing city, the commerce is large and is growing, and this is one of the greatest and most important parts of the country and one of the most important ports of the Atlantic Ocean, and we ask only the appropriation submitted by the Chief of Engineers, nothing more. We are not asking for any additional appropriation, but we are asking that the amount that is recommended in this estimate be retained in the bill, because we can show you, and these gentlemen who will follow me and who are familiar with the needs of Savannah Harbor will be able to show you clearly that we can not get along without the amount of this appropriation, \$500,000, for the maintenance of the harbor and \$620,000 for carrying on the present work.

I am informed by Mr. Thomas Purse, secretary of the board of trade, that there is one item of \$300,000 that is included in the \$620,000 item that has been recommended heretofore for the purpose of building jetties and for the repair and building of retaining walls, but he informs me that not a dollar of this amount has yet been spent for that purpose.

Mr. DEMPSEY. That estimate, Mr. Overstreet, is not for the funds that have been expended, but for future expenditure; for preliminary improvements to June this year, and for the fiscal year ending June 30, 1922?

Mr. OVERSTREET. Yes, sir; for the fiscal year ending June 30, 1922. That is the total amount that they say can be profitably used at Savannah, \$1,220,000.

Mr. Chairman, the local engineer, of course, in charge at Savannah is perfectly familiar with the needs of that port and harbor. He makes his recommendation upon his knowledge as an expert in that line of work. I am no expert. I do not know what Savannah's needs are personally, but we have got to depend on these gentlemen that do know. They submit these reports and say that the amounts are necessary.

These men who represent Savannah have a personal knowledge as well as the engineer of the need for this appropriation, because they lived there, have been there all their lives, most of them, and they are familiar with the necessities of the work that is needed to be carried on from day to day at that port to maintain the harbor and to carry on the present work.

Mr. DEMPSEY. Your present project is for a channel 30 feet deep a part of the way, with a general width of 500 feet from the ocean to the quarantine station, a little over 10 miles, and thence 26 feet deep and 400 to 500 feet wide to the city waterworks, about 15 miles, and then 21 feet deep and 300 feet wide to the foot of Kings Island, a mile and a half. That seems to be what the project is.

Mr. OVERSTREET. That is what it is. It is exactly what it is.

Mr. DEMPSEY. The work is 52 per cent completed?

Mr. OVERSTREET. We are asking for that amount to carry on this work. I do not intend to consume any amount of your time by going over these matters that are familiar to you. I wanted to leave this matter with these gentlemen, and they will not take much of your time. They assure me that their statements will be brief. They know that you are busy.

I will introduce Maj. W. W. Williamson, who represents the Board of Trade of Savannah.

#### **STATEMENT OF MR. W. W. WILLIAMSON, REPRESENTING THE SAVANNAH BOARD OF TRADE.**

Mr. WILLIAMSON. Mr. Chairman and gentlemen, in 1917 the Board of Engineers having recommended and Congress having approved the project for the Savannah Harbor of 26 feet at mean low water from the seaboard bridge to quarantine, and 30 feet from quarantine to the sea buoy, this committee most urgently requests the Committee on Appropriations to approve the budget of the engineer of the Savannah district for the coming 15 months, to June 30, 1922. The budget has been favorably acted upon by the Chief of Engineers.

The 26-foot project has never been attained and no work done on the 30-foot project. Our harbor is not in as good condition as it should be from several causes.

Mr. DEMPSEY. Just one moment. I see here in the engineer's report that they say that the 26-foot section of the channel, or from the Seaboard Airline Railway Bridge to quarantine, has been improved to project dimensions for the entire section, but that there has been some shoaling which requires dredging to restore the project depth.

Mr. WILLIAMSON. Yes, sir. But nothing on the 30-foot.

Mr. DEMPSEY. I understood you to say there had.

Mr. WILLIAMSON. No, sir. In 1895-96 a system of jetties, training walls, and spur dykes was constructed under the supervision of Capt. Carter, the engineer in charge. Please bear in mind this system was to take care of a depth of 23 feet at mean low water. About the time the work was completed the Government made an investigation, the officer was tried and convicted as it developed that a large part of the appropriation had never gone into the work.

It is the condition of these jetties and training walls that we are confronted with to-day, as reported by the engineer officer, "They are in poor condition and require refilling and repair." These works have settled and at high water most of the jetties and walls are submerged and the silt and sediment flow laterally over them. The object of the work was to hold the water in the river so that the ebb tide could carry out the silt in its rapid flow to the sea, but at ebb tide when they again become visible, the silt is drawn by the receding tide through the crevices and holes in the jetties and walls into the bed of the river. The present plans call for 26 feet at mean low water (32½ feet at high water) and it is all the more necessary to confine the flow between the jetties to secure the benefit of scouring on the ebb tide.

In the summer of 1916 Col. Langfitt, who was greatly interested in our harbor and energetically pushing the work, was transferred to other fields. He was succeeded by an officer who apparently did not realize the importance of active work. With ample funds on hand, the harbor was allowed to go backward, and to such an extent that the engineer's removal was requested and granted. A copy of the brief requesting his removal is available if desired. It will be seen that during the administration of two engineer officers the harbor has suffered. The best results were not obtained from the funds available.

The present officer, Col. Altstaetter, who came to us the latter part of 1918, has given his constant attention to the work; but with only one pipe-line dredge he has not been able to regain the setback which occurred under his predecessor. The new pipe-line dredge *Gilmer* has just arrived and should quickly improve matters. A part of the appropriation asked for is for the operation of this boat. We especially call your attention to the fact that the budget provides for no new work. We have endeavored to show that our harbor did not get the full benefit of two of the appropriations, due to the conduct of two engineer officers, and it is largely owing to this fact that the harbor is in its present unsatisfactory condition. We are, therefore, particularly anxious to have the budget for our harbor for the next 15 months approved in its entirety, so that the work can be

caught up with. With this done the subsequent budgets will be far much less, principally for maintenance.

In conclusion I want to say this: The jetties and training walls were constructed about 35 years ago, and they have practically gone to pieces and are in bad condition. We thoroughly believe that if they are repaired and put in proper condition that the cost of maintenance every year will be very greatly reduced.

Mr. DAVIS. What became of those officials that were negligent and did not perform their duties properly?

Mr. WILLIAMSON. One was sent to the penitentiary.

Senator SMITH of Georgia. The other was not a criminal offense.

Mr. DAVIS. It was an absence of mentality, a misfortune to the Government and to the city of Savannah.

Mr. DEMPSEY. We have a bill here of estimates that figures up in the aggregate something like \$57,000,000. Now, we only passed a bill for a lump sum of \$12,000,000 last year. It is hoped that we may be able to pass a larger bill this year. But we expect to reduce on the largest harbors in the United States, New York, Philadelphia, and Baltimore, and I am a Member from the State of New York.

Senator SMITH of Georgia. I may surprise you when I mention the fact that prior to the war the seagoing commerce of Savannah was next to New York on the Atlantic coast, and I think it is practically the same thing now.

Mr. DEMPSEY. You see the situation. The disposition is to do all we can for commerce, and we want to do that. The only question is just simply this: That the country is groaning under a heavy burden of taxation, and even with a very deserving project like this—and I will say to you frankly that I regard this as a deserving project—but we have with a project like that to take into consideration the question of the present financial condition, and aside from that you will find the disposition on our part is to do the best we can.

Mr. WILLIAMSON. I want to call attention to one fact that you will be saving money by putting the jetties in condition, and saving in maintenance every year.

Mr. DEMPSEY. The two projects seem to be distinct. The question of dredging to get the project depth and the question of repairing the jetties and training walls. They are different and the estimates are made on different plans. Of course, you can take the consideration of them up separately in determining what shall be appropriated. We are very glad to have heard you.

Mr. SMALL. Maybe some of the other gentlemen wish to be heard.

Mr. OVERSTREET. Mr. Purse, secretary of the board of trade.

#### **STATEMENT OF MR. THOMAS PURSE, SECRETARY OF THE SAVANNAH BOARD OF TRADE.**

Mr. PURSE. Mr. Chairman and gentlemen, I will not go into much detail as Maj. Williamson has covered so much. I will state simply the fact that the board of trade, as well as the city of Savannah, is appearing before you in order to have you concur in the recommendations of the Chief of Engineers.

The river and harbor act of 1907 provided for a project of 26 feet at mean low water, on the western limits of the city. I will not

go into detail. During the 13 years that have elapsed since Congress adopted the 26-foot channel, we have never reached the controlling depth of 26 feet at mean low water to the city, much less from quarantine to the sea. This is because of lack of funds to enable the work to be carried on in the harbor.

Really the principal cause of the insufficient depth is deterioration of the training walls and the jetties, and the lack of continuous dredging. Of course, the new dredge will be ready for operation in four or five days, weather permitting. What we need is the funds to keep this dredge, as well as those already located in Savannah—three in number—at steady work, and in addition the repair of the training walls and jetties.

These training walls were built 20 years ago, and they have deteriorated considerably since that time. Some of the largest walls and jetties have sunk into the mud to a certain extent, and have been washed so badly that a large amount of stone and brush is necessary to bring them back to their original height. Others have been completely washed away, so that the current of the river, instead of assisting in maintaining the channel, acts as a cross current and helps to fill it in.

It is also found that filling has taken place at the mouth of the harbor, and it is desired to raise the jetties above the original height.

In addition, part of these jetties were never absolutely completed as originally designed. While they thought those jetties had been completed, when they made investigations they found that they had not been completed. They had paid the money but did not get the work.

I have some photographs that will give you a very clear idea and show just exactly what effect the breakdown of the jetties and training walls has had on the Savannah Harbor, which is the reason we feel that this appropriation is so vital.

Now, here is one [indicating] which shows the worst that we have. These walls are broken down, just gone all to pieces. The river comes in and deposits its silt back here. We had the wall across here, and one here to protect that. This fall is gone completely. It does not show any sign on the map. This wall has gone to pieces. Now, all the surplus of the water over here goes into the river. The result has been that there is only 23 feet of water, and this survey was made in January, right up to date. It shows that, due to the fact that these training walls are broken, we can not get even 24 feet of water in here.

Now, you take over at this point, at the jetties, the breaking on the end here which I spoke of, these walls, that were of stone, have sunken down. Those walls have never been built up. The water out there is only 24 feet. But to give you an illustration, in Savannah three weeks ago there was a boat loaded at Savannah drawing about 24 feet. It was loaded with freight to go out, and on account of a good wind, but not a gale, she was afraid to go out on that account. This delay on the part of the steamer meant \$3,000 a day loss. It gives the harbor a black eye, and the sea-going men do not want to come in there.

But if we could get the jetties built up the dredging will accomplish something, and then dredging can be continued with good

effect. But to keep on dredging now with the walls broken down, the silt all goes back into the river again.

In order to give you an idea of the extent to which that filling has taken place, here is another map. Now, as a result of two surveys made in there it shows that the filling was taking place on an average of 2.9 feet per month. That shows what condition those walls are in. They just can not hold back anything.

I had these maps prepared by Col. Alstaetter, so that you would have before you some records to show what the situation is up to date. They perhaps will give you some insight into the proposition.

This shows Long Island Crossing on a larger scale. You see the wall breaking away and the water coming in, and you have the same thing to contend with here.

We have talked with the engineer's office and we find that they feel very confident, if this appropriation should be made of \$1,162,000 and should be a continuous operation for a period of 15 months, that the 26-foot channel can be obtained, and when obtained it can be maintained.

Senator SMITH of Georgia. In the most economical way?

Mr. PURSE. In the most economical way. We may dredge a 24 or 26 foot channel and go back a month later and find that the thing is filled in again.

Mr. DEMPSEY. Suppose you show me where the jetties are.

Mr. PURSE. This is Long Island Crossing. This is the one that is giving us so much trouble. These are the training walls and these are the jetties [indicating].

Mr. DEMPSEY. Is it not at Savannah where they have a new project?

Mr. SMALL. Yes.

Mr. PURSE. In 1917 there was an appropriation of a project of \$1,920,000, and realizing the necessity for a large appropriation for the repair and extension of the jetties in that appropriation, it was fixed at \$412,000. Not a cent has ever been used for repairing. We have not put a dollar on those jetties and training walls, because they took every dollar they could lay their hands on to keep the dredges going, and we did not have sufficient dredges to take care of the harbor, and when we made application for an additional dredge the Government saw fit to give us one, and we would have had the Panama Canal dredge, but she sank. This was charged against our account. We had to pay for it out of the appropriation for Savannah Harbor. That was some more money that we lost.

Mr. DEMPSEY. Will the channel be the same where these training walls and revetments are?

Mr. PURSE. It does not change the channel at all.

Mr. DEMPSEY. It does not at that point?

Mr. PURSE. No, sir. What we are trying to get is a 26-foot project.

Senator SMITH of Georgia. Would you let me call his attention to two matters?

Mr. DEMPSEY. Yes, sir.

Senator SMITH of Georgia. How does the seagoing commerce south of New York Harbor compare with the commerce of Savannah? At one time I believe it was more than all the others combined.



Mr. PURSE. In 1912 the value of exports from the port of Savannah was greater than those of any other port on the Atlantic coast except New York. In 1914, according to customs statistics, Georgia was reported second in position on the Atlantic coast, the coast of Savannah being the reporting port. Brunswick had a small amount.

I have the figures to give you a fair idea of how commerce has developed during the last five years. This will show you what the growth has been in exports and imports.

In 1916 the exports, strictly foreign, were \$36,837,000; in 1917, \$62,557,000; in 1918, \$98,040,000; in 1919, \$132,428,000; in 1920, \$260,995,000.

Now let us take the imports. In 1916 they were \$1,723,000; 1917, \$2,237,000; 1918, \$11,504,000; 1919, \$15,708,000; 1920, \$38,175,000.

Now, that will give you a pretty good idea. Here is another matter that I would like to call to your attention. The water-borne commerce during the past seven years amounted to \$3,057,818,000, or \$595,000,000 greater than the combined commerce of all ports from Wilmington, N. C., to Mobile, Ala., inclusive. I do not want you to understand that I am trying to make those ports look small, but to give you an idea of the business passing through Savannah during the past seven years.

The Pacific coast, on account of the high rates of freight, realizing the fact that in order to get in the southeast territory they have got to get there by way of water, have selected Savannah over all other South Atlantic ports. Take the Pacific Mail Steamship Co., they have brought a steamer in recently and they have another due right now. Take the Atlantic, Gulf & Pacific Corporation, that have delegations now working to back certain Birmingham projects—pig iron, steel, etc. They have recognized us.

There is another thing that I would like to call attention to, and that is Savannah as a coaling station. The Savannah Coal & Oil Co., which is a subsidiary of the Tidewater Coal Co., of New York, has five hundred-odd acres of ground just west of the city, on which they are constructing coaling stations of four units, each unit having a capacity of 7,500 tons per day.

In addition to that another coal company has leased from the Central Georgia Railway part of the Savannah slip, with a water frontage of 800 feet. They are erecting there three chutes for handling coal, which will give them approximately 10,000 tons per day. They have one conveyor system which gives them a capacity of about 1,800 or possibly 2,000 tons. Then we have other minor plants all over the city. Savannah expects to go very largely into export coal.

The Tidewater Coal Co. has interested in it some French people, who have a good deal of capital in it and who have bought heavily in it. That will require ships drawing over 24 feet of water. Right now the Pacific Mail has said to me that their ships are 27 feet, and that they have got to use little bits of boats to run in, and they do not want to use large boats with the conditions as they are and the deterioration going on as rapidly as it is. I think, gentlemen, you can see that the request for funds sufficient to build up the training walls and jetties is very reasonable.

Senator SMITH of Georgia. What percentage of saving would the improvement of those jetties earn for the Government in the lessened

cost of cleaning this stuff out of the channel? Would it not be around 25 per cent?

Mr. PURSE. More than that, Senator.

Senator SMITH of Georgia. Would not the investment in the improvement of those jetties save 25 per cent to the Government annually in the lessened cost of cleaning this stuff out of the channel?

Mr. PURSE. I do not think there is any doubt about it, and it would materially reduce their maintenance cost.

Senator SMITH of Georgia. That is what I mean, 25 per cent of the reduction of cost in maintenance.

Mr. PURSE. Yes. This chart shows here that we are spending money in just digging out, and it is coming in at an average of 2.3 feet, filling right in. That is shown on the map in red.

Mr. DEMPSEY. Have you a near-by dumping ground?

Mr. PURSE. That is over here [indicating]. You see the dredges dumping right out to these islands and filling them up. That reclaims a good deal of land. The seagoing dredges take it out to deep sea and dump it.

Mr. DEMPSEY. Are these on the same island?

Mr. PURSE. These are reclaimed islands all through here. We figure on reclaiming a considerable amount of land. The city purchased the land for municipal improvements, dockage, and such things as that. That is right about in here where these training walls are broken. If you will notice, I have given in black there the training walls. But those here are so serious that I put them in red on the blue print in order to emphasize them so that you could see, and see how vital it is to us to get that appropriation.

Going back to the Pacific coast a minute, you take the Centennial Mills Co.; that is one of the largest flour mills on the Pacific coast. They deal with Savannah, and they expect to supply North Carolina, South Carolina, Georgia, Florida, and parts of Alabama, and I am not absolutely positive, but probably the eastern part of Tennessee. They are grinding their flour first on the Pacific coast and bringing it around to Savannah; then they have a large mill there which they are constructing at a cost of \$400,000 or \$500,000, and they will bring their products right to Savannah. Savannah is growing as a distributing point for the Pacific coast.

Mr. SMALL. I doubt the advisability of emphasizing the commerce, because I do not think the subcommittee need to be converted on that point.

Mr. PURSE. I could file the other papers here, including this map, showing the commerce which Savannah handles. I think they may be of value to the committee.

Mr. Chairman, I do not think that there is anything else that I could emphasize at this time. Everything has been so thoroughly gone into. I think you gentlemen really appreciate how necessary it is for us to have our training walls and jetties repaired, so as to assure, when digging of the channel has been done, that it will remain in that condition and not fill almost immediately, and save the Government the expense of cleaning it out again.

Mr. OVERSTREET. I want to introduced Mr. Cabell, who represents the mayor.

## STATEMENT OF MR. J. L. CABELL.

Mr. CABELL. The mayor of Savannah intended to come on with this delegation, but owing to unforeseen circumstances connected with the municipal affairs he was unable to come. He asked me to come in his stead.

Mr. Williamson and Mr. Purse have gone so fully into the details of Savannah Harbor that I do not know of anything that I can add, with one exception, and that is that the municipality of Savannah realizes the vital importance of the matter discussed here to-day and wish to cooperate with the National Government in every way possible. During the past two years we have expended upward of \$300,000 in acquiring municipal wharves and water-front property. This property has been developed to meet the requirements of the Rivers and Harbors Committee, and if there is anything further that we are called upon to do, why we are ready to do it.

Mr. DEMPSEY. The land that you acquired is being built up and made available?

Mr. CABELL. Yes; we have a municipal dock up on the city water front.

Mr. DEMPSEY. It is being filled up by these excavations. How much land have you there?

Mr. CABELL. I do not know just how many acres.

Mr. PURSE. One thousand six hundred acres.

Mr. WILLIAMS. Seven thousand two hundred feet water front.

Mr. DEMPSEY. Are you building docks there?

Mr. PURSE. Yes; that is the deepest part of the river there, called the Five-fathom Hole. It averages in that section around 31 and 32 feet.

Mr. CABELL. We are filling up from the water side and also dumping refuse from the city.

Senator SMITH of Georgia. There is one question I want to ask. Savannah owns quite a frontage, and is it not true that you furnish free dockage to the Government?

Mr. CABELL. Yes, sir; the *Olympia* was there and also the torpedo-boat destroyers, without charge.

Mr. DEMPSEY. The dockage is open to all?

Mr. CABELL. Yes.

Mr. DEMPSEY. It is municipally owned and operated, and gives free and equal facilities to all boats that come in?

Mr. CABELL. Yes.

Mr. SMALL. I would like to say this: I have some knowledge of Savannah Harbor. The gentlemen have not only made a strong presentation, but conditions should compel the committee and Congress to be as liberal as possible with this harbor. I give you just a brief illustration: The project is for 30 feet from the sea to quarantine station, about 10½ miles. They now have only 24 feet controlling depth.

Mr. DEMPSEY. With a tide of how much?

Mr. SMALL. Six feet. Then the project is for 26 feet from quarantine to the city of Savannah, at the city waterworks, and on that stretch that they only have 22 feet. Then there is another project for 21 feet depth for a mile and a half from the city waterworks

up to the foot of King's Island and on that they have only 17 feet depth. With a commerce of about 2,000,000 tons, of very large value, and with the evidence as to the class of vessels which are seeking commerce at Savannah, it is quite evident that there is a necessity of giving them an increased depth, and in so far as the financial condition of the Government will justify it, I think Savannah Harbor does present a case where the subcommittee should go just as far as possible in meeting this estimate for maintenance and for further improvements.

Mr. DEMPSEY. I have examined the report in these particulars to which you refer, Mr. Small, and as to the draft of vessels that use the harbor. Now, there is one thing only which occurs to me, and as to which I inquired a moment ago. You will remember that we had a hearing of the Savannah delegation last year, in which they proposed to change the route of both the outer and the inner channel. I am sure about the outer route, but I am not so sure about the inner route. By these changes it was proposed to avoid this question of shoaling. Now, I understand that we granted a survey and that that survey is now pending. That report has not been sent in, has it?

Mr. MCGANN. No, sir.

Mr. DEMPSEY. The question in my mind is how that would affect your proposition. Now, I asked you the same question, Mr. Purse, when you spoke.

Mr. PURSE. You remember at that time my idea was that my position was—

Mr. DEMPSEY. I have kept it in my mind, although it was a year ago.

Mr. PURSE. Dr. Golden was the man who spoke of the idea of straightening the channel.

Mr. DEMPSEY. Here is my recollection: The outer part, Mr. Small, was to be straightened, giving the harbor a new entrance and a shorter channel by some 3 or 6 miles. Now, that is my general recollection of it. The inner part, my recollection is, was to change the present course to one where there was higher and firmer ground, and there would not be the danger of shoaling.

Senator SMITH of Georgia. What was supposed to be the cost of this change?

Mr. PURSE. You take, for instance, the continuing of this project with the rehabilitation of these training walls and jetties, we feel that this can be maintained very satisfactorily and we will have the best results.

Mr. DEMPSEY. Without the change?

Mr. PURSE. Without the change. We found that this change would have cost millions upon millions and it would have been many years before we would have got it.

Mr. WILLIAMSON. I have had a talk with Col. Alstaetter, the engineer, and he does not approve of the proposition. That is the reason we did not say anything about it.

Mr. DEMPSEY. I thought I remembered it.

Mr. PURSE. I saw then it was not advisable, but I could not say anything.

Senator SMITH of Georgia. I understood that the cost of the change would be up in the millions and utterly impractical.

Mr. SMALL. I thought at the time that they were emphasizing it too much. That is a matter for the engineers.

Mr. DEMPSEY. Another thing, if you had any proposed change pending, it would embarrass you very much in getting appropriations for the present channel.

Senator SMITH of Georgia. Absolutely; yes.

Mr. WILLIAMSON. I think the committee is willing to say that we abandon that.

Mr. SMALL. Maj. Williamson, you are familiar with the views of the district engineer. He does not contemplate any substantial change?

Mr. WILLIAMSON. No; that is what I just repeated.

Mr. PURSE. That is the reason why we ask for the appropriation for 15 months, to make it continuous. If it is not continuous it is apt to go back on us. With a continuous operation, and we once get our 26 feet, with the jetties and training walls filled up, we are fixed.

Mr. SMALL. When it is completed you can rely on scouring?

Mr. PURSE. Yes, sir.

Mr. OVERSTREET. May I say one word? We feel deeply grateful to you for your kind and thoughtful attention to this hearing.

Mr. DEMPSEY. We are very glad you came.

Mr. OVERSTREET. Pardon me just a moment. These gentlemen suggested that I ask you if you want them to go on record as abandoning this new survey.

Mr. DEMPSEY. No.

Mr. OVERSTREET. We are perfectly willing to do that. I might add that this was a pet scheme of Coburn's.

Mr. DEMPSEY. It might be all right in view of the fact that a survey has been ordered. The question might come up on the floor of the House or in the Senate.

Mr. SMALL. The language of the authorization says:

Savannah Harbor, Ga., from the foot of Kings Island to the sea, with a view to consolidating all projects relating to Savannah Harbor, widening, straightening, and deepening the same in such manner as to depth and width as may be deemed advisable to respond to commerce.

That does not authorize any substantial change anywhere.

Mr. DEMPSEY. "To respond to commerce," that is all there is to it.

Mr. PURSE. That is the reason for putting that in. It is sometimes looked upon as a 30-foot, 26-foot, or 22-foot project. They say you have three projects, and they say "Why not complete one." The idea of a survey was to consolidate everything into one project and appropriate for one item. That is the meaning of the paragraph. I should like to have something put in there indicating that the intention is to consolidate the three projects.

#### MANTEO BAY, N. C.

Mr. DEMPSEY. Now, turn to page 16, and we find 12 items in the Wilmington (N. C.) district which are grouped together, and in the group there are appropriations for six items, three of those being very small. Now, suppose we take the three items that are fairly large first—\$4,500, \$8,500, and \$15,500. First, Manteo Bay, Pamlico and Tar Rivers, and Neuse River, respectively, page 606.

Gen. TAYLOR. Taking Manteo Bay first, \$4,500, it has a commerce of only 7,900 tons, but I would like to call attention to the location of that bay. It is on an island where the only possible means of communication is by boat, is some distance separated from the mainland, and it is very essential to the people living on that harbor that it should be maintained.

Mr. DEMPSEY. How many people on the island?

Gen. TAYLOR. It has not a large population, largely fishing. I think Mr. Small knows.

Mr. SMALL. About 4,000 or 5,000.

Gen. TAYLOR. You see, it is between Albemarle and Pamlico Sounds, and the only means of communication with the outside world is by boat, and it is practically the only shelter there is on the island, that little bay.

Mr. SMALL. And Manteo is the county seat of a county embracing that shallow strip of land along the coast, which separates the ocean from the interior channel. It never can have any other transportation than water.

Gen. TAYLOR. There has been very little spent there since 1917. In 1917 \$5,000 was spent. In 1918 \$168 and 1919 \$145 for some examination, or something of that kind or character that was made there. But no work has been done there since 1917.

Mr. DEMPSEY. Mr. Small, does that narrow strip of land separate the ocean from these interior waterways decrease or increase as time goes on?

Mr. SMALL. There is a certain increase in population.

Mr. DEMPSEY. I mean, does the volume of land change; are there accretions or does it wash away?

Mr. SMALL. In some places there have been accretions and in some places a wearing away. It varies.

Mr. DEMPSEY. It is so irregular that you can not characterize it one way or the other?

Mr. SMALL. Take it in the main, I am not aware of any lessened area as a whole. It is known locally as "the banks." It is a series of sand dunes. Occasionally you will find trees and vegetation, but mostly sand dunes.

Mr. DEMPSEY. General, you think this is essential, then?

Gen. TAYLOR. I do, sir.

Mr. DEMPSEY. What you propose to do is to operate a dredge there?

Gen. TAYLOR. Yes, sir. We have a small pipe-line dredge that is towed around from one locality to another in that district where the work is needed and navigation requires it.

Mr. SMALL. That improvement is very essential. The mail boats distribute the mail to all that section.

Mr. DEMPSEY. By boat?

Mr. SMALL. Yes. They have very great difficulty in getting in and out of that channel.

#### PAMLICO AND TAR RIVERS, N. C.

Mr. DEMPSEY. The next item, gentlemen, is Pamlico and Tar Rivers, \$8,500 for maintenance, page 610.

Now, let us see; at the end of last year there was a channel 200 feet wide and  $9\frac{1}{2}$  feet deep from the mouth to the county bridge, 9 feet to the Atlantic Coast Line Railroad bridge. Find that, will you, Mr. Small, on the map.

Mr. SMALL. It is only a 10-foot project.

Mr. DEMPSEY. In the last year you spent your money for snagging?

Gen. TAYLOR. Yes, sir; we had very little money and that was spent to take out the worst snags.

Mr. DEMPSEY. What you propose to do this year is to operate a dredge there about two months?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And that is to remove the shoaling?

Gen. TAYLOR. To remove the shoaling and to operate a snag boat, a hoister, it is called. That is really a small nonself-propelled snag boat which is quite inexpensive. It only cost \$800 a month to operate. It removes the snags and then the channel is dredged.

Mr. DEMPSEY. What do you say about that?

Gen. TAYLOR. I think it should be given. I would place that in the essential class. Notice there is a considerable commerce there. 156,000 tons, and for the past several years there has been very little expended, only about \$3,000 a year. That was simply in taking out the snags.

#### NEUSE RIVER, N. C.

Mr. DEMPSEY. The next item is the Neuse River, N. C., \$15,500, \$2,100 on hand, tonnage of 183,000 tons worth about \$8,000,000. How large a place is New Bern, Mr. Small?

Mr. SMALL. About 20,000.

Mr. DEMPSEY. Well now that is a 9-foot project?

Mr. SMALL. By a peculiar designation, 9-foot dead low water, which really gives them a greater depth than mean low water. It is one of the few projects that is designated that way.

Gen. TAYLOR. Yes; it is designated that way for the reason that there is really not a tide there. The variation in level is due to the wind being in different directions, blowing the water in or out. What we try to do is to designate a datum plane, such as will give a reasonable navigable depth for the project for the greater part of the time. If we should say mean low water there, the wind might blow the water out 2 or 3 feet below that level and keep it out for a long time. That is different from the conditions where there is a regular tide.

Mr. DEMPSEY. The project, page 619, provides for a channel 300 feet wide, 8 feet deep at dead low water, and 20 feet wide and 8 feet deep at New Bern, with some lesser depth above. Now, as the result of a year's work, there is a clear channel to 74 miles above New Bern.

Mr. DAVIS. What does it mean—that it is impossible to get the project depth on account of snagging?

Gen. TAYLOR. It means that it continually shoals, and that it has to be redredged continuously. It is a rather peculiar situation. It means that it can not be completed and then go away and leave it.

Mr. DEMPSEY. This is all for the dredging work?

Gen. TAYLOR. Probably some snagging. The operation of the hoister contemplates two and one-sixth months, at \$800.

Mr. DEMPSEY. What do you think about that?

Gen. TAYLOR. I think that should be given.

SWIFT CREEK, CONTENTNEA CREEK, AND TRENT RIVER.

Mr. DEMPSEY. Now, here we take the three next items in a group, Swift Creek, Contentnea Creek, and Trent River. Those are on pages 623, 625, and 627.

Gen. TAYLOR. They are all small streams. They have a relatively small commerce, although the total commerce on the three streams amounts to about 50,000 tons. It runs into an agricultural country, takes out farming produce and fertilizer in. It is necessary to do this snagging in order that the commerce may be carried on.

Mr. SMALL. It is substantially without transportation by railroad?

Gen. TAYLOR. I would like to say that Contentnea Creek is one of the best examples of a creek that has paid good returns for the money invested that I know of. I was stationed in that district for a time and am acquainted with the conditions. At the time this project was adopted, it was practically impossible to carry on any business on the river. It was absolutely choked up with snags so that no boat of any size could use it. Due to the work of the Government it was opened up to navigation, and after that there was a million dollars' worth of commerce a year. The farmers brought in fertilizers and sent out miscellaneous produce, and after the country had been developed it offered sufficient inducement for the railroads to come in and reap some of the benefits. The commerce dwindled somewhat. It was a remarkable development following a small expenditure. That stream has been quoted as showing the waste of the rivers and harbors appropriations, yet I do not believe you can find United States money that has been better invested than the money put in that stream, although at the present time the commerce is practically nothing.

Mr. DEMPSEY. What do you say about those three small items?

Gen. TAYLOR. I think they should be given without any question.

BEAUFORT HARBOR, N. C.

Mr. DEMPSEY. We next come to Beaufort Harbor, N. C., \$6,600. That has \$24,000 on hand, a larger sum than anything we have been considering. It had \$26,000 six months ago. In view of those facts, do you not think that that item should be omitted? Have they not enough, in other words, to take care of that for another year?

Gen. TAYLOR. The item of \$6,000 is for quite a different purpose than they expect to use the \$24,000 on hand. The money on hand will be used altogether for the operation of the dredge for about six months' dredging. The money that is asked will be for repairing the training walls at Beaufort, 1,000 tons of stone at \$6 a ton, \$6,000. That is another case where a work of that kind deteriorates, and if you do not do it this year you will probably have to do it later and do still more work. It is something that undoubtedly is not absolutely essential at this time. But it is a matter of economy to do it now.

Mr. DEMPSEY. Could not they use that \$6,000 out of the \$24,000?



Gen. TAYLOR. I think all that money will be needed for dredging the channels. They all shoaled.

Before we leave that I would like to correct my statement. I see that in the detailed estimate it will only require two months' work of the Government dredge to remove the shoaling which has taken place, and that four months' work is needed to complete the new work, \$15,900. Under those circumstances I am satisfied that that new work can be deferred if it is necessary to use the money for repairing the training walls.

WATERWAY CONNECTING CORE SOUND AND BEAUFORT HARBOR, N. C.

Mr. DEMPSEY. Your next item is \$2,500 for waterway connecting Core Sound and Beaufort Harbor, N. C., page 634.

Mr. SMALL. That is a channel used by fishermen.

Gen. TAYLOR. That is a cut-off that avoids going out into the water that is dangerous for small boats.

Mr. SMALL. It is a small project, but important to them locally.

Gen. TAYLOR. I am satisfied that the small amount for the maintenance of that waterway, which is a cut-off between Beaufort and the sounds to the north, which avoids the rough waters in the entrance to Beaufort Harbor, is a very desirable improvement. It is used very largely by the fishing boats, of which there are a great many of a flat-bottom type that are very uncomfortable in rough weather.

BEAUFORT INLET, N. C.

Mr. SMALL. General, before we leave that group, I notice that there is no estimate submitted for Beaufort Inlet. What is the controlling depth of Beaufort Inlet at this time? That, Mr. Chairman, is the Beaufort terminus of the Norfolk-Beaufort Waterway, and there is already some other commerce from Wilmington, Charleston, Savannah, and Jacksonville, which comes up coastwise and comes through Beaufort up to Norfolk, Baltimore, and Philadelphia.

Gen. TAYLOR. On June 30, 1920, this is reported to have had a depth of 14 feet, with a width from 200 to 300 feet. So that that compares fairly well with the width from the inlet waterway of 12 feet, which gives it 2 feet more depth than is the inland waterway from Beaufort Harbor north.

Mr. SMALL. Would that be sufficient to compensate for the additional depth required?

Gen. TAYLOR. We have \$28,000 available, and it would not require more than two months' work with one of our small seagoing dredges. It would give us sufficient depth there.

CAPE FEAR RIVER, N. C.

Mr. DEMPSEY. The next is Cape Fear River, N. C., at and below Wilmington, for maintenance, \$695,000, on hand, \$330,000.

Mr. SMALL. Of that amount estimated I think the report recommends that a dredge be constructed at a cost of about \$600,000.

## CONSTRUCTION OF FOUR SEAGOING HOPPER DREDGES.

Gen. TAYLOR. Yes, sir. And I would like to take up that item in connection with some other items, small items which are part of the estimate, and at the proper time I want to make a recommendation that we be given an appropriation to build four seagoing hopper dredges of the type similar to Cape Fear. I will give in detail my reasons for it, and I do not know whether you would like to have me take it up now. Perhaps I might just as well put it in in this place, because it will come up in connection with other items.

Mr. SMALL. I think that would be well, because if I understand it, if you have authority to construct those four dredges you could reduce the appropriation by \$600,000.

Gen. TAYLOR. Yes; it would omit that appropriation entirely.

Mr. SMALL. Just as the chairman says about taking it up now.

Mr. DEMPSEY. We might just as well take it up now as he has it in mind. I would say in preface to it, that as I understand it, General, you find that you can do Government work, as a rule, more cheaply with your own dredges than by contract, and consequently that it is impossible to do the amount of work, which it is important to commerce should be done, by contract, and with the number of dredges you now have; and so it seems there are three things that should be known in addition to whatever suggestion you have in mind: First, the relative cost of contract work and the cost of operation of your own dredges; secondly, whether you are embarrassed by a lack of dredges—Government and belonging to contractors; and thirdly, whether construction costs will be down enough within the time that you give contracts to build so as to get the dredges at a fairly reasonable price, we all having in mind that this work is work for a long period of time, and that we should not do it at the apex, but should wait for a reasonable price in construction.

## COST OF DREDGING.

Gen. TAYLOR. I would like to say, Mr. Chairman, as to the relative cost of dredging, that a number of years ago I had some tables made up showing the actual cost of work done by Government dredges and compared it with the actual cost of contract prices for dredging all over the United States. I lumped it all together and the comparison of the total was that our own dredging cost us exactly 50 per cent of what we paid by contract.

Mr. DAVIS. Fifty per cent less?

Gen. TAYLOR. Yes. I allowed also a reasonable amount for depreciation, interest on investment, overhead expenses, and everything connected with that kind of work, the same as we have to allow with contracts. However, there are certain things that contractors have to do that we do not, and which they should have the benefit of in comparing costs. Every time they bid on work they have to go to certain expenses whether they obtain the contract or not. We may have 10 bidders on the job and only 1 out of the 10 gets the contract. The other 9 lose the expenses connected with making the bid. Besides their plant is not employed all the time and they have to get a good price while they are actually at work to pay for their over-

head expenses, and for the maintenance and upkeep of the plant while not at work. They also have to pay for insurance. There are three items where the Government does not have to pay. That is where we get a great advantage over the contractor.

Mr. DAVIS. Is not there a considerable overhead charge on your dredges while you are not operating?

Gen. TAYLOR. We do not have sufficient dredges so that they are ordinarily idle. Given reasonable appropriations, all of our dredges are at work all the time. And that is where we have the great advantage. We have only a comparatively small number of dredges. I do not happen to have the figures with me, but I can find that total and I will be glad to insert it in my statement. The bulk of our work is done by contract.

Mr. DEMPSEY. Could you make that more specific, giving some idea of the percentages?

Gen. TAYLOR. I will give you those figures which will show exactly the number of yards handled during the year by contract and by Government plant. The work done by contract was considerably greater than the work done by Government plant. Having dredges continuously employed was another great advantage for we got the best of the men that were available in that class of work. We gave them fair wages, we gave them excellent quarters, gave them good food, making it an attractive service. In the last year or two, however, we have fallen behind in the relative cost of work as compared with contract work. At this time the contractor has quite an advantage over us because he is able to pay higher wages than we, getting the best men, and a still greater advantage has been the fact that nearly every contractor pays a bonus to his men. That is something that we can no very well do. The contractor demands a certain output on the dredge during the month.

Now, if that output is exceeded, the men share in the profit. The contractor places a reasonably low requirement, so that in nearly every case men get a good bonus. That means that the men are going to help all they can to produce a good output. We are instituting that system a little, gradually. We are trying it out in one of our districts and trying to see what we can do with it, without involving ourselves too much in the bonus system, because as soon as we do that we would become involved in complications with the Civil Service Commission for paying higher salaries for certain positions than the civil-service rules permit.

These dredges to which I have reference here are what we call seagoing hopper dredges, which is a type of dredge that no contractor has. It practically is a seagoing ship, and it is too large and expensive a piece of machinery for a contractor to buy with the uncertainty as to its operation. We are operating out upon the ocean bars. They are capable of going to sea any time or distance. We have, for instance, one dredge working at Norfolk, which was formerly owned by the Atlantic Transport Line, and was taken over in 1898 by the Quartermaster Department and used as a transport between San Francisco and Manila. At the end of the war in 1899 she was laid up and was eventually turned over to us, and we converted her into a dredge by taking out a lot of her insides and putting in bins in which we could carry material and take it out to the

sea and dump it. She is our largest and most expensive dredge to operate, but her capacity is so large that the cost per cubic yard is small.

Of this type of dredge we have on the Atlantic and Gulf coasts eight small wooden dredges which have been built at various times from 1891 to 1904. They have reached a stage of deterioration where it is no longer economical to repair them. Our repair bill for the last year has been very heavy. The result of that deterioration and heavy cost of repairs is that the cost of dredging with those dredges has run up very greatly. From 1909 to 1917 the cost of dredging with those wooden-hull dredges has varied from 7.5 cents to 10.2 cents, with the exception of 1915, when we had some very heavy expenses for repairs, which made it go up to 16.6 cents.

In 1918 they cost 23.5 cents a yard for dredging and in 1919 it was 21.8 cents. In those two years the expenses for repairs were 8.7 cents and 7.6 cents.

Now, as compared with that we have a number of steel-hull dredges, which are more modern dredges. Those dredges cost for operation from 1910 to 1917, inclusive, varying amounts, varying from 5.4 cents to 8.6 cents. In 1918 the cost was 9.8 cents and in 1919 it was 11.4 cents. In other words, the cost of running for the last two years those steel-hull dredges has been less than half the cost of the wooden-hull dredges. The average cost of the wooden-hull dredges for the 10 years for all the work they have done has been for operation 7.7 cents per cubic yard, and for repairs 3.4 cents per cubic yard, with a very greatly increased cost of operation and repairs the last two years.

The cost for the steel-hull dredges for those 10 years has been 6.6 cents per cubic yard, and for repairs 1.2 cents per cubic yard.

Mr. SMALL. Quite a difference.

Gen. TAYLOR. So that the cost for the repairs for those steel-hull dredges has averaged just one-third what it has for the wooden-hull dredges, and for the past two years——

Mr. DEMPSEY. Have they had about the same life? That is, have they been built about the same period?

Gen. TAYLOR. No; the steel-hull dredges were built later. But our older steel-hull dredges are practically just as good as the new ones.

Mr. DAVIS. The capacity is about the same?

Gen. TAYLOR. The steel-hull dredges are larger. The average capacity of these that I am referring to is larger than that of the wooden hulls. But the cost of repairs for the steel hulls in 1918 was 1 cent as compared with 8.7 cents for wooden hulls, and in 1919 it was 1.7 cents as compared with 7.6 cents. In other words, for the last two years it was about one-sixth as much for the steel hulls as for the wooden hulls.

Now, all of those eight wooden-hull dredges have reached a stage where it is no longer economical to repair them. I have at the present time on my desk estimates for repairs for some of those dredges which I am holding up. I have one in particular, the dredge *Key West*, used in the Jacksonville district, on which there is an estimate of \$48,000 for repairs. I am not at all sure but that if we put the dredge on the dry dock we will find that it will cost nearer \$100,000

than \$48,000 before the repairs are completed. That has been our experience in several cases.

One of those is the *Caucus*, used in the Montgomery district. We undertook to repair her last year at the Norfolk Navy Yard. Before we got through we had spent \$117,000, and that is the bill for repairs on that dredge.

Now, I would like to discard all eight of those dredges and build four steel dredges. We can save \$500,000 a year in the operation of those dredges upon discarding those eight wooden dredges and building four steel dredges.

Mr. DEMPSEY. Would the four steel dredges do the same work?

Gen. TAYLOR. Better work and more work than the eight wooden-hull dredges.

Mr. DAVIS. What do you estimate the cost of each?

Gen. TAYLOR. We estimate at the present time that the dredge we are planing would cost \$750,000.

Mr. DEMPSEY. What was the prewar cost?

Gen. TAYLOR. A dredge, which is nearest to what I propose to build, the *Michie*, which was built in 1912-13, cost \$378,198. So that our estimate at the present time is not quite twice as much as that dredge cost in 1912.

Mr. DEMPSEY. Did you let it by contract?

Gen. TAYLOR. Yes; by contract, and the dredge which we are building now is a considerably better dredge—about the same size, but a considerably better dredge—the boilers of larger capacity and larger engine power. We have found that the engine power was not sufficient to make it safe in some of the channels, and this winter we are installing two new engines—taking out the old engines and putting in two new ones that we bought from the Shipping Board. We paid \$30,000 for the two engines, and the cost of installation will probably make the total cost about \$50,000. Also its boilers are of such capacity that they are hard pressed all the time. The new dredges would have larger boilers and larger engines and would be altogether an improvement over the other.

Mr. DEMPSEY. Do you not think it would be worth while to ask for informal bids from all of the concerns that would do this kind of work right now before these hearings are completed? Steel concerns are down as much as anybody in the country, and want work as badly as anybody in the country. To illustrate that, steel concerns are urging payments to the railroads in partial payments instead of waiting and making a bulk payment at the end of a complete settlement on the ground that the railroads of the country are furnishing steel concerns with work in car building and repairs, and locomotive building and repairs, which they can not pay for unless they are paid by the Government. I think you would find that these concerns would jump at the chance of building these dredges at a very much lower figure.

Gen. TAYLOR. I am satisfied of that, Mr. Chairman; but I think our estimate of \$750,000, which is only 100 per cent of what the dredge actually cost us in 1912, is a fairly good estimate even under the conditions of which you speak. But I can confirm your view by saying that three or four months ago we received bids for some steel barges in Philadelphia Harbor to use in connection with one

of our dredges over there. We had at that time two or three bids only, and they were very high, and we rejected them on account of excessive costs. About 10 days ago we got 16 bids, one of which was \$23,000 below the estimate made last summer, proving very conclusively the statement that you just made, and I am very well satisfied that if we could get the money to build four of these dredges at the present time it would be a very attractive job, because building four dredges at a time gives a good amount of work under very advantageous conditions, and we can get a much lower bid on four dredges than we can on one.

Mr. DEMPSEY. I would suggest, for the purpose of presenting this to the committee and before making our report, that you informally get advice in the nature of bids, or otherwise, as you think advisable.

Gen. TAYLOR. Three months ago I tried to get informal bids such as you suggest, and at that time they would not bid. They would not give an informal bid.

Mr. DEMPSEY. I think you will find conditions have changed.

Gen. TAYLOR. I am satisfied of that. I think probably I can do that. It will take a few days to get such a bid.

I would like to continue a little more, if I may, and I will give a little detail as to what the condition of these wooden-hull barges is.

The first one is the *Cape Fear*, which was built in 1895. It has been employed at the mouth of Cape Fear River since originally built, and during the past year we have been just about able to keep her afloat, and that is all. She has reached a condition where it is almost dangerous to operate her at all. We have been operating her because some dredge is absolutely necessary for maintenance of that channel in the mouth of the river.

The next one is the *Caucus*, which belongs in the Montgomery district. She was built in 1905, and she is the dredge which I stated a few minutes ago—the original cost of that dredge was \$176,000, and last year we spent \$117,000 in repairs. She is in such condition now that she is probably good for three or four more years, when another similar bill will come in.

The next, the *Charleston*, was built in 1891. She is a little bit of a dredge; only carries 276 yards. The *Charleston* originally cost \$69,000. Last year we spent in all \$27,000 for repairs on her. She is employed at the entrance of Mobile Harbor, where it is necessary to keep her going. We must have some kind of dredge there.

The next, the *Cumberland*, was built in 1902 at a cost of \$144,750. Last year her bill was comparatively small for repairs, only \$12,000; the previous year \$67,000. That dredge is in the best condition of any of our wooden-hull dredges, and she is good probably for six or eight years longer. She is employed continuously in Savannah Harbor.

The next, the *Key West*, was built in 1904 at a cost of \$101,708. Last year we spent \$36,405 on repairs. At the present time, as I have just stated, there is an estimate of repairs on that dredge of \$48,000, which I am satisfied will run above that before we get through with it. That dredge is employed in various points in the Jacksonville district. It has been working down at Key West in the channel. That dredge should be laid up with no attempt to repair her.

The *Sabine*, built in 1901, reached such a condition last year that we did not consider it safe or economical to use it on the Gulf. We had it condemned, and sold it, and some one gave us about \$25,000 for her, and we do not congratulate him on his bargain at all. They got some junk out of it. She was taken down to Tampico, and is being used at the mouth of the Tampico Harbor; and if it keeps afloat much longer I will be surprised. It was in such rotten, leaky condition that I did not consider it safe to use it, and when we would load it it would work in such a way that the machinery got out of line. It was not a safe dredge to use.

The next one, the *Sumter*, was built in 1904 and is a dredge employed on Charleston Harbor. It originally cost \$191,000. Last year we spent only \$16,000 in repairs, but the year before \$68,000. It is laid up at the present time practically unable to operate on account of the necessity for more urgent repairs, and there is an item you will find when we come to Charleston Harbor for a new hull for the dredge. I am satisfied that we should not spend \$400,000 for a new hull because the machinery is 15 or 20 years old, and it is a great deal better to build a modern dredge that will do twice the work at half the cost.

The last one, the *Winyah Bay*, was built in 1898 at a cost of \$86,000. The past two years we have only spent \$11,000 on her, but that is for the reason that it has been operated very little. It has been laid up practically unusable.

So that there are eight dredges that I would like to replace with four modern dredges.

Mr. DAVIS. When you build a new steel dredge how soon thereafter do you have to begin repairs?

Gen. TAYLOR. We have steel dredges, Mr. Davis. The *Chinook*, of which I spoke as our big dredge, was built in 1892. A number of our larger steel dredges were built in 1904 and 1905 and are in just as good condition to-day as when we built them. We have kept them up, the hulls are in perfectly good condition, and we have renewed their pumps and engine parts when necessary, and while we estimate the life of one of those dredges—we charge off in making our estimate for it; we charge off 5 per cent for depreciation, indicating a life of 20 years—yet those dredges are 16 years old and are just as good as when they were built.

Mr. DAVIS. The cost of repairing is practically nil?

Gen. TAYLOR. No; but, as the table shows, we have spent in our average cost for repairs for steel-hull dredges—on our large dredges—in the 10 years, in which we have dredged 192,000,000 cubic yards of material, 1.04 cents per cubic yard. For our small steel dredges, that have dredged 47,000,000 yards, our average cost is 1.2 cents. Whereas on the wooden dredges, which have dredged 42,000,000 yards, the average cost is 3.4 cents in the last two years.

Mr. SMALL. Is it proposed to utilize these dredges on the Atlantic and Gulf coasts?

Gen. TAYLOR. On the Atlantic and Gulf coasts, where they are most needed. By not having them appropriated for in any particular harbor it will be a great advantage, because then we will be able to send them as they may be needed without any objection from anybody. As it is now we have a dredge in a certain harbor, built for

that harbor, and if we try to take that dredge to some other place, no matter how much it is needed in the other place, the people on that harbor to which the dredge belongs object. While we transfer them sometimes, it is under protest.

Mr. SMALL. Would these new dredges be self-controlled?

Gen. TAYLOR. Practically seagoing ships.

Mr. SMALL. Capable of going out to sea on their own power?

Gen. TAYLOR. Yes; anywhere in the world.

Mr. DEMPSEY. If these four dredges are approved, that \$690,000 item for Cape Fear River could be omitted?

Gen. TAYLOR. Yes, sir; \$600,000 of it.

Mr. DEMPSEY. You have got \$330,000, besides, on hand. Do you not think that we could cancel that whole \$695,000?

Mr. SMALL. It is an important port there.

Gen. TAYLOR. Yes, sir; we could cancel the whole of it, for this reason: One of the items is operation of a seagoing dredge for 12 months, \$180,000. That is an item of expenditure for the funds that were on hand when the estimate was made. It was assumed that there would be some seagoing dredge available for that work, but largely due to conditions which I have described of our wooden-hull dredges we are now very short of those seagoing dredges and we are very badly in need of more of that type.

#### NORTHEAST (CAPE FEAR) AND BLACK RIVERS, N. C.

Mr. DEMPSEY. Your next items are \$3,000 for Northeast (Cape Fear) River and \$2,000 for Black River. I see you have \$25,721 on hand.

Gen. TAYLOR. \$25,375 of which is available for expenditure under the river and harbor act of March 2, 1919, which adopted the project and requires that local or other interests contribute one-half of the cost of the work, namely, \$25,375 to match the sum which the United States appropriates. The local interests have not yet put up the money so that our share is not available for expenditure, and that reduces the amount on hand practically to nothing.

Mr. DEMPSEY. That is a snagging proposition?

Gen. TAYLOR. Yes, sir; that particular project for that \$25,000 was estimated for dredging the channel from the harbor of Wilmington, N. C., up the northeast branch of the river for a certain distance, a ship channel connecting with the ship channel which leads up to the city of Wilmington. The balance is for snagging work in the upper section of the river, and it is for that that the \$3,000 is asked for. It is quite a different project from the one for which the money on hand was appropriated.

Mr. DEMPSEY. The money on hand was appropriated for the channel from Wilmington leading up to the industrial section?

Gen. TAYLOR. Yes, sir. There are some phosphate works and other factories on that section of the river.

Mr. DEMPSEY. Where is this?

Gen. TAYLOR. Near Wilmington, N. C. That is the main river leading up to Fayetteville. That is a little stream that comes up along in here somewhere. That is a snagging proposition.

Mr. DEMPSEY. The Black River is right near it?



Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you say about the Black?

Gen. TAYLOR. I think that both should be granted. It is a little bit of snagging that is necessary.

---

THURSDAY, JANUARY 13, 1921.

WACCAMAW RIVER, S. C.

Mr. DEMPSEY. The next is Charleston, S. C., district. There are two items grouped together there, Waccamaw River and Great Peedee River. There are practically no funds on hand. The two are for maintenance. I see, General, that the Waccamaw has a channel of 9 feet in depth, except for a very slight distance, up to Conway.

Gen. TAYLOR. It has 12 feet depth, except for a short distance, about 350 feet, and is 80 feet wide to Conway.

Mr. DEMPSEY. And for that short distance it is 9 feet?

Gen. TAYLOR. It is 9 feet; yes, sir.

Mr. DEMPSEY. How far is it to Conway?

Mr. MCGANN. About 46 miles.

Mr. DEMPSEY. Above Conway for 44 miles they have 9 feet, and then 3 feet and 2 feet. I do not suppose you consider very much that 2 feet and 3 feet.

Gen. TAYLOR. No, sir; that is very small. That is used practically only at high stages and is largely a logging proposition.

Mr. DEMPSEY. Now is there anything much that is needed for the 44 miles above Conway where the real channel exists?

Gen. TAYLOR. I do not know, but I assume that there will be more or less snags in there. The snags are brought down from the upper section of the river and lodge in the lower portion where the current is sluggish. That condition is practically universal in all the streams in that section of the country, and unless we remove the snags in that section of the river, of course, it is not practicable for any navigation at all.

Mr. DEMPSEY. Well, the thing that occurred to me is whether navigation is practicable when you reach the point above the 9-foot channel.

Gen. TAYLOR. Oh, yes; it is practicable.

Mr. DEMPSEY. What they say is that \$10,000 can be economically expended for maintenance and snagging for 92 miles above the mouth, and your report seems to indicate, General, that there is only one boat on the whole river. Look at the bottom of page 666 and at the top of page 667.

Gen. TAYLOR. No; I do not understand it that way. That is below Conway. That is a deeper draft boat than those that run in the upper sections of the river.

Mr. DEMPSEY. For the business below Conway it seems to indicate that there is but one boat, and that has been laid up for repairs.

Gen. TAYLOR. That is correct, that it was laid up for repairs part of last year; but that does not mean that it will be laid up all of this year. On page 3610 is given an itemized statement of the traffic.

Mr. DEMPSEY. Nine tons of soft drinks.

Gen. TAYLOR. But that itemized table there shows that the statement given on page 667, which is a comparative statement, is for the traffic above Conway only. That does not give the traffic below Conway.

Mr. DEMPSEY. As I read it there at the top of page 3610, the first column there is the tonnage, and the second column, below Conway, it is given as 52,000 tons. I suppose below Conway means between Conway and the sea.

Gen. TAYLOR. Yes, sir.

Mr. SMALL. They seem to be lacking in railway facilities?

Gen. TAYLOR. Yes; it is rather an isolated section of the State.

Mr. SMALL. It is in the extreme coastal plain section?

Mr. DEMPSEY. But there is no traffic and no prospect for traffic with only one vessel.

Gen. TAYLOR. There are two steamers operated below Conway.

Mr. DEMPSEY. What do you say as to the \$10,000?

Gen. TAYLOR. Well, they certainly should have some money for maintenance of the stream. Probably that could be reduced one-half without very serious results.

#### GREAT PEEDEE RIVER, S. C.

Mr. DEMPSEY. We now come to the Great Peedee, page 668. That is a 9-foot channel, I see, to Smiths Mills, 50 miles; thence  $3\frac{1}{2}$  feet to Caines Landing, 86 miles. It has been completed and is maintained to Caines Landing. This is a snagging proposition?

Mr. SMALL. Yes.

Mr. DEMPSEY. Well, what do you say, taking all the facts into account?

Gen. TAYLOR. The character of that stream is identical with that of the Waccamaw, a stream which rises in the central or northern part of the State and flows down out of the mountains and through wooded country into the coastal plain where the current is much less and snags accumulate, and if they are not removed the river becomes absolutely blocked. It is necessary to have a small amount for the removal of snags each year, and I doubt very much if they could be even reasonably well removed with a less amount than is estimated.

Mr. SMALL. It would seem so, for that distance.

#### SANTEE RIVER AND ESTHERVILLE-MINIM CREEK CANAL, S. C.

Mr. DEMPSEY. The next item is Santee River and Estherville-Minim Creek Canal, S. C., \$10,000 for maintenance, \$1,400 on hand. That was a project for a 6-foot channel, 70 feet wide, the entire river to be snagged.

Gen. TAYLOR. That river forms the route of boats operated between Columbia, S. C., and Georgetown. Formerly there was considerable commerce on the river. During the last year there has been comparatively little commerce for the reason that the boats have been laid up. We have been assured that the owners of the boats are proposing to reestablish the service, and they seem to think that

with the established service they can do a real business on the river. If they do not have the money to snag it, which is practically all it is, of course, they can not operate.

Mr. SMALL. This canal really connects the Santee River with Winyah Bay?

Gen. TAYLOR. Yes; the appropriation covers the whole thing. The Santee River has to be snagged all the way up, and the Congaree up to Columbia.

Mr. DEMPSEY. Here is the difficulty with this project, as I see it, Gen. Taylor, on top of page 673, according to the report it is going to cost \$10,000 a year to dredge that channel, and it is to be dredged twice a year, and they have 6,300 tons of freight. That will be \$2 a ton for what they are handling just for dredging. Does that appeal to you as being—

Gen. TAYLOR. If that was all the business that was to be done on the canal or river, I should say that it would be a very large contribution by the Government to that business. But I think that the maintenance of that route has more significance than merely the amount of freight that went over it the last year. You see, in previous years they have had from 18,000 to 30,000 tons of business. I know that there has been an attempt at navigation on the river in recent years, and I should not like to see that omitted this year. I think that if they do not do something in the course of a year or so you might as well abandon the project.

Mr. DEMPSEY. I do not think we ought to put \$10,000 there under existing conditions.

Gen. TAYLOR. I think you might cut that to \$5,000.

Mr. SMALL. There is this to be said in favor of this particular project. A part of it is the Estherville-Minim Creek Canal which connects the Lower Santee with Winyah Bay, and that particular canal is a part of this present intercoastal waterway, and the only inside connection from Winyah Bay to Charleston.

Mr. DEMPSEY. If you are going to improve it and make it a substantial waterway and it is susceptible of such improvement, why, I think that that is a strong argument; but as it is now it is too small draft, no traffic, and here is this local question pending. I have a great deal of sympathy with your intercoastal waterway all the way down, Mr. Small.

#### WATERWAY BETWEEN CHARLESTON AND WINYAH BAY, S. C.

Now, take the next item, General. Have we not been a little bit confused about the preceding item, and the next one, waterway between Charleston and Winyah Bay?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. Now, is that Estherville-Minim Creek Canal one end of the waterway between Charleston and Winyah Bay at the other end?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. In other words, what the chairman is asking, is the Estherville-Minim Creek Canal a part of the waterway between Charleston and Winyah Bay?

Gen. TAYLOR. Yes; it is. You will find a description of what it includes at the bottom of page 678, or the top of page 679, where it

states, "Estherville-Minim Creek Canal," showing that the Estherville-Minim Creek Canal is the north end.

Mr. SMALL. Is that maintained as a part of this waterway between Charleston and Winyah Bay, or is it maintained as a part of the Santee River?

Gen. TAYLOR. As a part of the Santee River.

Mr. SMALL. That is what I supposed, and that is the reason I made the statement.

Gen. TAYLOR. You see the project from Charleston to Winyah Bay has not been wholly adopted yet. When the project from Charleston to Winyah Bay is adopted, the Estherville-Minim Creek Canal will be absorbed in that project.

Mr. DEMPSEY. Now, you have \$8,000 on hand. Your commerce was 7,600 tons, and the proposal is \$10,000 for maintenance and \$16,500 for further improvements. The project is for a channel 4 feet deep, 60 feet wide, and a branch channel to McClellanville.

Gen. TAYLOR. On page 681 is given a statement of the navigation conditions.

Mr. SMALL. It would seem that some appropriation should be made for this waterway between Charleston and Winyah Bay. I do not know whether the amount estimated could be reduced or not.

Gen. TAYLOR. I do not think it could, Mr. Small. It is a case of sending a small dredge in there to dredge that channel, and I do not believe that you could reduce that and maintain the channel. While the commerce is not large, as the report states, it is a diversified commerce that is carried by small boats, and the people living upon those islands depend upon this canal as the only means of transportation, and I am satisfied that a great deal of business that is carried there is not reported at all. A man goes out with a small motor boat and carries his own stuff to market and brings home something, and there is no record of it at all.

Mr. DEMPSEY. What they say on page 681 is that it is the larger boats of which no records are kept, and that the motor trucks seem to be stealing the business from the larger boats.

Gen. TAYLOR. Yes; but they can not steal all of it over on the islands unless they can swim across.

Mr. DEMPSEY. The available statistics give the total commerce between McClellanville and Winyah Bay as 157 tons, valued at \$14,600. Of course, that is simply the north stretch.

Gen. TAYLOR. Simply the north stretch.

Mr. DEMPSEY. And a short part of the total stretch?

Gen. TAYLOR. That is the stretch that has not yet been improved,

Gen. TAYLOR. That is the stretch that has not yet been improved there would have been a good deal more business on it.

Mr. DEMPSEY. Well, \$16,000 is estimated, I see, for completing the channel between McClellanville and Winyah Bay, and \$10,000 for maintenance between Charleston and McClellanville.

Mr. SMALL. The general has already expressed an opinion about the maintenance. Suppose you inquire whether the improvement item of \$16,500 is necessary.

Mr. DEMPSEY. In view of the statement that some of the deficiency of the traffic is due to the increased use of motor trucks, do you not think that it might be well to defer that improvement item there

until you see how your commerce develops from Charleston to McClellanville?

Gen. TAYLOR. I think it would be advisable to continue that work so as to finish the work through from McClellanville to Winyah Bay. That \$16,500 is the amount which is estimated would be required to complete that section. That would give them the completed channel from Winyah Bay to Charleston.

Mr. DEMPSEY. Is there anything at Winyah Bay to attract business any more than there is at these other places?

Gen. TAYLOR. Oh, yes.

Mr. DEMPSEY. Is there more population? How much of a population is there, and what business is there?

Gen. TAYLOR. The city of Georgetown is located on Winyah Bay, and that has been in the past quite an important seaport.

Mr. DEMPSEY. What is the size of that now, do you know?

Mr. McGANN. The new census gives the population of Georgetown as 4,579. In 1910 it was 5,530.

Gen. TAYLOR. It is quite an important distributing point. It is in a cotton-raising country. When I was there it was a very active place, and at one time the Clyde Line, I think it was, made it a regular port of call. They did a considerable business between Georgetown and New York, and Georgetown is quite a distributing point for a large section of the country.

Mr. DEMPSEY. Well, I will ask as to those two items, could either one of them, in your judgment, be cut down some; and if so, to what?

Mr. SMALL. You are referring to the waterway between Charleston and Winyah Bay?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. I certainly would not cut down the item for maintenance. If I were going to cut the other one, I should make a cut of 50 per cent, making it \$8,000 in round numbers.

Mr. DEMPSEY. Would the cutting of that to \$8,000 increase the cost of doing work?

Gen. TAYLOR. I think not, because the work is done by a small dredge. When the dredge is in that section it can be used for maintenance work of the larger part of the channel, and she could go into the north end and do work as needed at very little increased cost, merely the cost of towing.

Mr. SMALL. Before you get to the next item, may I suggest that you return to the Santee River project and the Estherville-Minim Creek Canal? Gen. Taylor did not express any final opinion about whether that was essential.

Mr. DEMPSEY. He said he could cut it to \$5,000.

Gen. TAYLOR. I said that some appropriation for maintenance was essential and I did not think it could be cut below \$5,000.

#### CHARLESTON HARBOR, S. C.

Mr. DEMPSEY. General, before we enter on the item of Charleston Harbor, we have all of us seen something in the newspapers about some agitation in Congress in the last week or two. What do you know about that with regard to the Charleston Harbor project?

Gen. TAYLOR. I know nothing about it, except that I know there was a bill last year proposing the abandonment of the Charleston

Navy Yard. As far as I know, that bill has not been favorably reported from the committee to either House.

Mr. DEMPSEY. Has there not been something done by Congress in this session, within the last week or two?

Gen. TAYLOR. There has been some talk about it.

Mr. DEMPSEY. Nothing more than talk?

Gen. TAYLOR. Nothing more than talk.

Mr. DEMPSEY. Do you know what the attitude of the Navy Department and the Army is?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What is their attitude?

Gen. TAYLOR. The attitude of the Navy Department is very much in favor of the construction of the dock. I have talked several times with officers of the Navy, and particularly with Admiral Parks, the Chief of the Bureau of Yards and Docks, and I have a letter from him, dated January 7, 1921, giving some information concerning the proposed dry dock which would probably be of interest.

Mr. DEMPSEY. Yes. First, General, will you just state in a general way what the projects are there and what the present condition of them is?

Gen. TAYLOR. The project as it existed prior to 1918 provided for a depth of 28 feet in the harbor and 30 feet across the bar. That project had been practically completed. The river and harbor act of July 18, 1918, adopted a project of 40 feet in depth, to extend from the sea to the Charleston Navy Yard, a thousand feet wide, generally. That is an exceedingly good harbor entrance and it is a good example of a successful improvement by means of jetties. The old channel used to come out and turn around and follow down here [indicating], nearly south, parallel to the coast. The jetties were built out, the south jetty going directly across the old channel, throwing the channel directly out to sea. The construction of that jetty naturally caused some stormy times with the pilots while we were changing the channel, but it is now a good and easily maintained channel.

Mr. DEMPSEY. The old channel is not entirely closed?

Gen. TAYLOR. Not entirely. There is a sill across the jetty which prevents more than a certain amount of water going out that channel.

Mr. DEMPSEY. In other words, holds water in the new channel?

Gen. TAYLOR. Yes, sir. Neither of those gaps in the jetties are filled up to high tide. Close to the shore here is a gap extending between those two points on the theory that the tide coming in will come over those submerged portions and fill the harbor more promptly, and going out get the direction and go straight on out. It is a very successful improvement. It was built that way with the expectation that if it did not prove successful it would be very easy to put more stone on the gaps and build them up more, simply saving money in the hope that it would work. It did work, so we saved money.

Mr. SMALL. It is my information that the entrance to the sea at Charleston compares favorably with the entrance to Hampton Roads; in fact, is an easy entrance.

Gen. TAYLOR. It is very easy as far as the depth goes; 30 feet is the limiting depth. They have a straight channel going in and out. It could not be better than that.

Mr. DEMPSEY. You have got the project depth of 28 feet, and the old project was substantially completed.

Gen. TAYLOR. Thirty feet.

Mr. DEMPSEY. Under the old project. Now, the existing project provides for the construction of jetties and to dredge for a channel 40 feet in depth?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And that is to be a thousand feet wide?

Gen. TAYLOR. A thousand feet wide.

Mr. DEMPSEY. From the sea to the navy yard. Where is the navy yard?

Gen. TAYLOR. It is located on Cooper River, above the city of Charleston.

Mr. DEMPSEY. North of Charleston?

Gen. TAYLOR. Yes, sir; and right alongside is one of the terminals that was built by the Army during the war.

Mr. DEMPSEY. I see. Now, are there any new jetties to be constructed?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. The jetties are completed?

Gen. TAYLOR. The jetties are completed; yes, sir.

Mr. DEMPSEY. Now, your main tidal range is 5 feet, so you really have 35 feet there?

Gen. TAYLOR. At high tide; yes, sir.

Mr. SMALL. Referring to the navy yard, I read, at the time the committee had under consideration the adoption of the 40-foot project, the report of the Navy board upon the location of this navy yard at Charleston, and my original prejudice was entirely removed. It is a very strong report. It goes into all of the available locations on the South Atlantic south of Hampton Roads, and gives some very strong reasons—strategic reasons—for the existence of the navy yard south of Cape Hatteras, and concludes with reasons therefor that Charleston is the most desirable location.

Mr. DAVIS. Is it much of a commercial city?

Mr. SMALL. It does not compare with Savannah.

Mr. DEMPSEY. It had 863,000 short tons of commerce last year, valued at \$127,000,000. That is one of the ports curiously enough that increased from 1917 and 1918, and came up nearly to the prewar period.

Gen. TAYLOR. There is still another thing to note there, in your commercial statistics, Mr. Chairman. In 1919 the statistics given in the report give only the freight that was loaded and discharged in the port of Charleston. In addition thereto 457,000 tons of freight, valued at \$125,000,000, remained in vessels which discharged part of their cargo, being consigned beyond. This is in addition to the 863,000 tons, so there were 457,000 tons more of freight that came in and went out again, so that the business that went through the jetties was over a million tons.

Mr. DEMPSEY. They made that a port of call?

Gen. TAYLOR. They made that a port of call. For instance, a boat, a tramp steamer, going to Savannah or some other port, went in there and discharged part of her cargo or took on part of her cargo and went somewhere else with the balance.

Mr. DEMPSEY. The dredging for the past year has been in the entrance channel and in Cooper River?

Gen. TAYLOR. Yes, sir; it has been done in two ways. The outer portion we dredged with our seagoing hopper dredge, the *Chinook*, putting her in there to see what we could do, to see at what rate we could carry on the work. About two years ago the Navy was pressing us very hard to push this work, as they said they were going ahead with the dry dock, and we wanted our work finished as soon as the dry dock was completed, so we put the dredge in there to see what we could do with it. We determined after running the dredge there for a short time that we could dig the channel within the time that the Navy could complete its dry dock. After having obtained that information we transferred the dredge up to Norfolk where she was more urgently needed. We took out with the dredge about a million yards of material between the jetties and beyond. We then let two contracts for two sections of the channel a short distance below the navy yard. One of those contracts is practically completed—I think one is entirely completed and the other one is fairly well along.

Mr. DEMPSEY. Then, so far one section has been made 40 feet and the other practically completed for 40 feet.

Gen. TAYLOR. It is under way; yes, sir; each section containing about a million yards of material.

Mr. DEMPSEY. What about this condition that the local interests shall furnish evidence that they will provide certain permanent facilities?

Gen. TAYLOR. They did that. The wharves in Charleston are not up to date as a whole. They serve the purpose, and the business is carried on, but they are not modern wharves. But they have rail connections and facilities sufficient to handle the business that they do.

Mr. DEMPSEY. Now, here is the situation in this project as I understand it: The jetties are completed.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. There was available at the end of the year a 30-foot channel, 900 feet wide inside the jetties, and a similar channel 600 feet wide—

Gen. TAYLOR. Between the jetties the channel is 30 feet deep, 900 feet wide.

Mr. DEMPSEY. And inside the jetties 600 feet wide?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Beyond the jetties means outside the jetties?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. A 30-foot channel with a width of 900 feet.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Inside the smaller channel, a 30-foot channel 600 feet wide?

Gen. TAYLOR. Yes, sir. Now, it says, "and in addition there has been a deepening along the axis of the channel."

Mr. DEMPSEY. What do you mean by that?



Gen. TAYLOR. I mean there is a channel 30-feet deep and 900-feet wide. In the center of that 900 feet of width there is a width of 300 feet 32 feet or more in depth.

Mr. DEMPSEY. And that is almost the distance, I see they say, from deep water in the Atlantic to deep water inside the harbor?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Materially wider than 300 feet?

Gen. TAYLOR. Yes, sir.

Mr. DAVIS. What are you going to do with this appropriation for improvement? What is the main thing you are going to do?

Gen. TAYLOR. Dredge.

Mr. DAVIS. Dredge where?

Gen. TAYLOR. In the channel.

Mr. DAVIS. The whole channel?

Gen. TAYLOR. No; it will not dredge the whole channel, but we will dredge a portion of the channel.

Mr. DEMPSEY. Here is what they say. I am coming to that. Now, all through the inner harbor, the width of the channel, General, is in excess of 300 feet?

Gen. TAYLOR. Yes, sir; there is a good channel all the way through the harbor up Cooper River.

Mr. DEMPSEY. And your only question now is deepening in order to get that 40 feet?

Gen. TAYLOR. That is all.

Mr. DEMPSEY. Now, I see that you say, page 685, General, that if the work on the dry dock is to be prosecuted actively, an appropriation of \$1,900,000 should be appropriated, of which \$1,500,000 will be used for dredging, and \$400,000 for the reconstruction of the dredge Sumter.

Gen. TAYLOR. Yes, sir; that dredge is one of the dredges to which I referred, and if that appropriation for which I asked for the four dredges, modern steel dredges, is given, this \$400,000 is unnecessary.

Mr. DEMPSEY. What is there as to the prosecution of the work of building that dry dock? Is that being done or not? What is the condition of it in fact, and what is the condition of it legislatively or legally?

Gen. TAYLOR. Legislatively I do not know. Legally it has been adopted, and unless there is some further legislation abandoning the project it will be prosecuted and completed. Congress has the matter under consideration.

Mr. DEMPSEY. I am advised that the matter is to be taken up next Thursday—that would be a week from to-day—for consideration in Congress.

Gen. TAYLOR. I think your action as to the appropriation should depend largely on what action is taken on the dry dock. If the dry dock is not to be completed, there is absolutely no use of making this appropriation. If the dry dock is to be completed, this appropriation should be made. They are interdependent, absolutely.

Mr. DEMPSEY. Now, General, let us assume for the moment that the dry dock is to be built. Has any work been started on it, and who builds it, the Navy or the Army?

Gen. TAYLOR. The Navy. It is to be built by the Bureau of Yards and Docks, and a memorandum given to me January 6, 1921, by Admiral Parks, Chief of the Bureau of Yards and Docks, states:

Preparation has been made for the construction of the pump-well section of the dock by yard labor. The department has been in communication with the yards where excess material is known to be available, with a view to having this material transferred to Charleston for use in the construction of the pump-well section of the dry dock.

Of the funds appropriated by Congress for the construction of the dock, there has been obligated to date a total of \$60,541.67, of which \$37,730.57 was obligated since Congress adjourned on June 5, 1920.

Careful estimate of the cost of constructing Dry Dock No. 2 at the Navy Yard, Charleston, S. C., indicates that this dock will cost approximately \$4,750,000.

Mr. DAVIS. Then legislation is necessary so far as the dock is concerned and further appropriation is necessary to continue the legislation.

Gen. TAYLOR. No legislation is necessary for the prosecution of the work on the dry dock.

Mr. DEMPSEY. It has been authorized?

Gen. TAYLOR. It has been authorized.

Mr. DAVIS. The money has been appropriated?

Mr. SMALL. Some of it.

Mr. DEMPSEY. The question, as I understand it, Mr. Davis, is whether the authorization shall be repealed. That is the question. Is not that the way you understand it, Mr. Small?

Mr. SMALL. Yes, sir.

Gen. TAYLOR. The naval act of July 1, 1918, provided \$1,150,000 toward the construction of the dry dock.

Mr. DAVIS. That money has been appropriated?

Gen. TAYLOR. That money has been appropriated in the sum of \$1,150,000; yes, sir. The estimated cost at that time was \$4,000,000. They now make it \$4,750,000.

Mr. SMALL. The General stated the proposition correctly, in my opinion. The necessity of this appropriation depends upon whether Congress repeals the authorization of the dry dock. If Congress repeals the authorization it is not necessary, and so long as the authorization remains presumably Congress will continue to appropriate for its construction, and the increased depth of 40 feet is necessary. For commercial purposes it is not necessary.

Mr. DEMPSEY. Now, General, in that connection, it is a fact, is it not, that there remains on hand, in outstanding contracts, \$434,000; on hand and available in cash, \$279,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Making a total of about \$710,000?

Gen. TAYLOR. Yes, sir. But, of course, that \$434,000 is covered by contracts. It is being very rapidly used up. I will say that we made those contracts prior to the date the advisability of continuing the work on the dry dock was raised. When that question was raised, or since that question has been raised, we have made no large contracts for dredging there, because we felt certain that we could complete the work of dredging and improving the channel, provided the money was available, as soon as they could complete the dry dock, and we did not feel, under the circumstances, that we should press work on the channel so long as there was any question about the construction of the dry dock.

Mr. DEMPSEY. Now, General, let us assume, for the moment, any resolution to repeal is defeated. With \$700,000 on hand, with the facts before us now that only \$60,000 has been obligated in the construction of the dry dock, and nothing actually spent, and that the materials for the use of that \$60,000 have not been transported to Charleston, but that they are simply contemplating transporting them, do you not think that we could do with considerably less than \$1,900,000 in this bill?

Gen. TAYLOR. \$400,000 you can omit for the reconstruction of the dredge, if the other dredges are authorized. You can omit that without any question. We would not spend the money on remodeling the dredge if we got authority to build the four dredges, the modern steel dredges.

Mr. DEMPSEY. Could we not cut the \$1,900,000 right in two, with the \$700,000 on hand, even if they fail to repeal that provision?

Gen. TAYLOR. It could be done at this time, although I do not think it would be advisable, because later you will have to make considerably larger appropriations in order to enable us to finish the channel by the time the dry dock is needed. The estimated cost of the channel is \$7,540,000. So that in order to enable us to finish that work, say, in four years, we would have to have approximately \$2,000,000 a year. If you only give us \$1,000,000 a year it would take seven or eight years. They can finish the dry dock in much less time than that.

Mr. DEMPSEY. I suppose this agitation for limitation of the Navy will be likely to have considerable effect on the discussion of this question.

WAPPOO CUT, S. C.

Mr. DEMPSEY. The existing project at Wappoo Cut is for a channel 7 feet deep, 200 feet wide, and the dredging is completed. This is Charleston?

Gen. TAYLOR. Yes; this is Charleston. This is the Ashley River, that forms part of a route from Charleston to Savannah. It is used a good deal.

Mr. DEMPSEY. A continuation of your intercoastal waterway?

Gen. TAYLOR. Yes, sir; it is part of the intercoastal waterway, a little piece of it.

Mr. DEMPSEY. It connects what with that?

Gen. TAYLOR. It connects the Ashley River with the Stono River.

Mr. DEMPSEY. Where is that revetment, the cut? Do you know where that cut is?

Mr. SMALL. It is at the two ends.

Mr. DEMPSEY. What do you say, General, to this?

Gen. TAYLOR. That is a channel that is used quite a lot by the small boats traveling between Charleston and Savannah.

Mr. DEMPSEY. Do you think that that is a harbor that will have increased usefulness?

Gen. TAYLOR. I do; decidedly so.

Mr. DEMPSEY. What do you say about the amount?

Gen. TAYLOR. I think it should be allowed.

Mr. DEMPSEY. All right; that finishes that page.

We will now hear Mr. Hulbert.

**STATEMENT OF HON. MURRAY HULBERT, COMMISSIONER OF DOCKS, NEW YORK CITY.****EAST RIVER AND HELL GATE, N. Y.**

Mr. HULBERT. Mr. Chairman, I did not know when I came over this morning that your subcommittee was in session. I had intended to address a communication to you requesting an opportunity for a hearing before the bill was made up, but I am over to-day on quite a different matter. I learned, however, that there was a meeting, and I wanted to avail myself of the opportunity to come before you to present at this time at least two matters, the consideration of which by the Federal authorities is essential before the city can go any further than it has gone to the present time.

I understand that the Hell Gate improvement, so far as the 35-foot channel is concerned, is approximately 50 per cent completed. I think that with the appropriations from now on at proportionately the same amount per annum as has been appropriated in the past, since the project was started, the 35-foot channel could be easily completed in three years.

The Robert Dollar Steamship Co. has acquired the title to a considerable tract of land on the east shore of the Bronx, at which point they are now preparing plans for the construction of a modern, up-to-date steamship terminal. Mr. Shook, of the company, told me the other day that the plans were to be shortly in my hands for approval, and the application is also pending at the present time before the board of estimate and apportionment of the city of New York for franchise rights to make a connection with the New York, New Haven & Hartford and the New York Central into Bronx to this proposed terminal.

Mr. SMALL. Where is that terminal to be located?

Mr. HULBERT. At Hunts Point, in the Bronx.

**FLUSHING BAY, N. Y.**

The act of 1917 authorized the Secretary of War to make a survey of Flushing Bay, and Gen. Burr has lately held a hearing in New York, which was very largely attended by people interested in the development of Flushing Bay. At the suggestion of the mayor, the engineering force and the department of docks have laid out a comprehensive plan for the development of the west side of the bay, where we propose to put nine piers 1,200 feet long, 1,300 feet wide, with the available space for 16 additional piers if we should have occasion to build them.

Mr. DEMPSEY. Flushing Bay is right east of Hell Gate?

Mr. HULBERT. Yes, sir. I can point out to you right where the improvement is. It will begin at what is known as Bowery Bay, and they will build six piers there 300 feet wide and 1,200 feet long, then leave a space in the gore for a ship-repair plant. We will go down on the other side with 3 more piers, and then beyond that 15 additional piers, which latter piers we would probably build a width of 309 feet, the same as the big piers at Staten Island, with a length of 1,200 feet. The reason that this particular point has been selected

is that the connecting railroad over the Hell Gate Bridge gives us the opportunity of securing railway accommodations with the lines of the New York Central and the New York, New Haven & Hartford, and also by way of the New York connecting railroad from Bay Ridge with the Pennsylvania and other New Jersey lines. In the rear of this development is adequate space for a classification yard that would serve the allied railroads who might be called upon to furnish some facilities in connection with these piers.

Now, the thing that we have in mind is that if in making his report Gen. Burr will take into account, as we hope he will, the prospective development of the city of New York, and the Congress in taking whatever action it deems advisable to take on the report of the Chief of Engineers will make the authorization to the Secretary of War of such elasticity that as and when this development goes forward the Secretary of War will have authority to expend whatever money may be available, and other moneys appropriated for the extension of the so-called improvements to meet the requirements of the commerce that would be accommodated on piers of the type to be built by the city, so that we would not have to come back here from time to time and ask for another survey and an extension of the project—in other words, if for instance Col. Burr were to recommend, and the Board of Engineers and the Chief of Engineers should approve, so that the Secretary of War would have the authority to provide, within 30 feet or 35 feet, whatever the recommendation is or the Chief of Engineers felt the requirements of that particular locality necessitated, in conjunction with the improvement that was being made on the upland—you see we have to work in New York through the Sinking Fund Commission and the Board of Estimate and Apportionment—and if those two boards must wait, as they have been doing in the case of Jamaica Bay on the subsequent action of Congress for additional channel authorization, it not infrequently happens that at the time action is taken here the complexion of the board in New York is changed by an intervening election, and then when you have gotten responsive legislation here to coordinate the action of the two boards up there, there is a change of administration and a change of policy and we do not get anywhere.

Gen. TAYLOR. But it saves money.

Mr. HURLBERT. I do not know, General, whether that is true or not, because I have read lately a number of speeches that have been made by Admiral Benson in which he has pointed out that because of the unwillingness of the city of New York to develop its water front it is going to be necessary for the Shipping Board to divert business elsewhere, and I do not need to tell you that the city of New York can not develop its water front unless there is cooperative development by the Federal Government of the channel approaches. It may be that the Government saves money, but it does not save the criticism leveled at New York, with some justification.

Gen. TAYLOR. I think what Admiral Benson referred to was not the development of the outlying sections of the harbor but the lack of development of the water front and full use of the waterway.

Mr. HURLBERT. I do not know that he specified any particular locality; but you realize, gentlemen, that to modernize—and I suppose that is what he means by the unsatisfactory development of the

water front—to modernize the wharves from the Battery north to Chelsea district would be impossible unless you had some place to accommodate ships that were temporarily dispossessed along that water front while this scheme of modernization was under way; and that, for instance, is the primary reason why we undertook the construction of the Stapleton development at Staten Island. It is 60 per cent complete, and when it is completed we will have facilities for 48 ordinary vessels, and when we get those piers finished we will have sufficient relief from the strain of the North River to enable us to take sections of the North River as the existing leases of piers expire and modernize them in accordance with the plan which was approved by the commissioners of the sinking fund on the 29th of last July.

#### JAMAICA BAY.

But now, just as I have suggested, with regard to this Flushing Bay development—by the way, that scheme will be before the commissioners of the sinking fund for consideration on the 20th of January this year. We have reached a similar situation in Jamaica Bay. We have an unexpended balance of the Federal Government of \$450,000, approximately, while the city has an unexpended balance of \$850,000, approximately.

Now, there has been an 18-foot channel provided, 500 feet wide, from Barren Island to Mill Basin, in Jamaica Bay—that is, a distance of 8,800 feet—and the natural step that connects the basin, in accordance with the plan adopted by the act of June 25, 1910, would be to continue the 18-foot channel from Mill Basin as far as the \$450,000 would enable us to go.

But an 18-foot channel, in Jamaica Bay, in my judgment would not serve any commercial purpose for New York Harbor because you can not get any ocean carriers in there on an 18-foot channel. The city of New York would not be justified in the construction of piers between Barren Island and Mill Basin at a cost of six or seven million dollars if, after the piers were finished, you could get nobody up there except the barges or canal boats. So that the proposition submitted some time ago was that instead of taking this \$450,000 of Federal money and \$850,000 of city money and continuing an 18-foot channel north from Mill Basin as far as the money will enable us to go, and which channel, when completed, will not in my judgment carry any more business than the present 8-foot channel has carried, which is not very much, I believe that the available balance of \$1,300,000 ought to be utilized in extending the present 18-foot channel from Barren Island to Mill Basin as well as the entrance channel to the bay but at a depth of 30 feet, and if that is done, the city will proceed with the construction of the six piers, 6 of the 14 piers already laid out between Barren Island and Mill Basin and for which the city has set apart seven and a half million dollars for the purpose.

Now, this is a cooperative plan. There are certain things that can be done on the one hand in order to justify the doing of other things on the other. This area between Barren Island and Mill Basin is a marsh waste of some 1,100 or 1,200 acres. It is 99 per cent owned by

the city of New York. On the 21st of this month a public hearing will be had before the board of estimate and apportionment on the application of the president of the Borough of Brooklyn for authority to extend Flatbush Avenue across this marsh to the bulkhead line on the north side of Rockaway Inlet, which is the entrance to Jamaica Bay. Now, of course, the extension of this street, Flatbush Avenue, is essential for the purpose of providing connection to these piers when constructed.

There will also be on the calendar of the estimate and apportionment board for consideration to-morrow an application from the street-cleaning commissioners to make a contract with the Brooklyn Ash Removal Co. for the disposition of the ashes collected from the Borough of Brooklyn on the city-owned land in Jamaica Bay, to do which it is proposed to build a spur extension down Ralph Avenue and into the sites probably between Mill Basin and Barren Island, so that the Pennsylvania Railroad Co. will not only be afforded the opportunity of delivering those ashes and creating new-made land on the city's marsh, but on the completion of that fill we will have that railroad connection for service to these piers when wanted.

Now, I mention these facts to show you that so far as the city of New York is concerned, we are endeavoring to do what we think are the constructive steps necessary for the proper development of Jamaica Bay. We are arranging for the filling in of this 1,100 acres, we are arranging for the laying out and the construction of streets, with water mains, electric light and gas connections, and we have set apart the money for the construction of the piers, and both the commissioners on the sinking fund and the board of estimate and apportionment have not only gone on record as being in favor of the construction of these six piers, but they have done more than that. At a meeting of the commissioners of the sinking fund on the 16th of last December, a resolution was unanimously adopted which stated it to be the purpose and intention of the city of New York to lay out a comprehensive development of Jamaica Bay that would comply with the recommendation that is contained in the report of Gen. Beach, made to this committee at the last session, and that resolution of the commissioners of the sinking fund came before the board of estimate and apportionment on the 20th of December and was unanimously adopted there. Copies of the resolution were transmitted to this committee as well as to the Senate Committee on Commerce, and I think I also mailed a copy of the resolution to you, Mr. Dempsey, and also to Gen. Taylor.

Those resolutions indicate that so far as the city government is concerned there is a unanimity on the part of the boards and the city's administration that the improvement at Jamaica Bay should not only go forward, but it should go forward on pretty comprehensive lines and in accordance with the suggestions contained in the report of the Chief of Engineers affecting commerce facilities and track connections, and so on.

But how can we go ahead with this improvement unless we have the assurance of the Federal Government that the construction of these piers and the building of these streets and provisions for these terminal facilities will be coordinated with the 30-foot channel that will enable us to get ships to and from the docks after some ten or

fifteen million dollars have been expended in constructing them and their approaches from the land side?

Now, the city has before it at the present time an application made by one Alden H. Greeley, of Cleveland, Ohio, who represents a chain of 100 warehouses, as he states, throughout the United States, which desire to make New York their central point for import and export; and Mr. Greeley has proposed to the city that if the city is not willing itself, or if it is not able financially, to undertake at the present time the construction of the piers and the supporting warehouses and the installation of the necessary track facilities, that he, Mr. Greeley, and his associates will lease this property for a term of 10 years, with four renewals, which is the limit that the city can lease its property, at an aggregate rental of \$1,250,000, which, I think, approximates the taxes on the land at its present value, and that he and his associates stand ready to carry out this program to the extent of \$100,000,000, provided they have the assurance that the Federal Government will proceed with the construction of the 30-foot entrance channel to the main interior channel up through to Mill Basin.

Now, it is very well for public officials to criticize the city of New York because we do not make the necessary improvements in our port to accommodate the commerce of the nation that seeks accommodation there, but we simply say that we are ready to do it, and so far as is in our power we are doing it; and what we are asking now is the cooperation of the Federal Government to the end that we may do it without hindrance or obstruction.

The river and harbor act of 1910 adopted the report contained in House Document No. 1488. That document contained the report of Col. Knight, who surveyed for and reported upon the cost of a 30-foot channel in Jamaica Bay.

Now, it is very interesting to note one or two facts in connection with that. It is quite evident that in suggesting that as a first step—I emphasize to you the use of the word step as an indication that it was regarded as but an integral part of the 30-foot project—as the first step, it was suggested that a depth of 18 feet should be obtained, and for a specific purpose. This is what the report states:

The plan for improving the waters of Jamaica Bay, other than the secondary channels, contemplates affording an entrance to the bay of a minimum width of 1,500 feet and depth of 30 feet at mean low water, and a main channel following the western and northern limits of the bay, which channel is to be 1,000 feet wide and 30 feet deep.

For some years the widths of the entrance and the main channel need not be greater than 500 feet and their depths 18 feet, as the principal use for that time of these channels will be to afford a waterway for vessels bringing in material for wharf and other structures, whose construction must precede the ultimate development of the improvement.

And then it goes on to say:

The order of so much of the plan of improvement above outlined as should be executed by the United States is:

First. Dredge a channel 18 feet deep and 500 feet wide through the entrance as far as the southeast corner of Barren Island, in other words, to the beginning of the main channel.

Second. Maintain this entrance channel.

Third. Increase this channel to a width of 1,500 feet and depth of 30 feet.



Fourth. If in maintaining this channel it be found advisable to construct the east jetty, do so under continuing contract, for, once its necessity is determined, economy of construction will demand continuous, speedy work.

Fifth. Construct the west jetty, gradually extending it to such length as may be found advisable.

Dredging the main channel is not included above for reasons which will be given later.

The 18-foot channel should not be dredged until the Secretary of War is satisfied that the city of New York is prepared to undertake the dredging of the main channel to a like depth.

Now, the city of New York gave satisfactory assurance that it is ready to do so, and the Secretary of War accepted that certificate.

Then there is given a statement of the cost of those proposed improvements, based not on an 18-foot depth, but a 30-foot depth, with a width of 1,500 feet at the entrance and 1,000 feet in the interior.

Then follows the discussion with respect to the proportionate share of the cost which should be borne by the Federal Government and by the city of New York.

Now, the Board of Engineers for Rivers and Harbors, reviewing that report, says:

After careful consideration, the board is of the opinion that the United States should adopt a project of improvement consisting of the entrance channel and a main interior channel, as outlined above. The board is further of the opinion that the portion of the total expense to be borne by the city of New York should be any excess in the cost of excavating the main interior channel over 8 cents per cubic yard for 59,000,000 cubic yards (\$4,720,000).

There has been a recommendation by Gen. Burr that in view of the present cost the 8 cents should be increased to 12 cents.

Now, Gen. Marshall, who was then the Chief of Engineers, in submitting these documents to the Secretary of War, said:

I concur in the opinion of the district officer and the Board of Engineers for Rivers and Harbors that this locality is worthy of improvement in accordance with some progressive plan for joint prosecution by the United States and the local authorities, but it is also my opinion that the United States should not at this time be committed further than to a project for securing a depth of 18 feet, as provided in the first step of the progressive improvement recommended in the reports herewith. Any further improvement should be clearly shown to be in the interests of commerce, and the next step might properly provide for lesser depths than the 30 feet proposed by the second step in the plan now presented and for a corresponding reduction in cost to the United States.

Now, the Government therefore proceeded with the 18-foot channel, and, as I stated, that has been dredged from Barren Island to Mill Basin, a distance of 8,800 feet, without any substantial benefit resulting from it, because that depth of water does not justify us in building piers for the accommodation of overseas ships.

Mr. SMALL. Eighteen feet has already been provided from the entrance channel of the inner channel as far as Mill Basin?

Mr. HULBERT. Yes, sir.

Mr. SMALL. May I interrupt you a moment?

Mr. HULBERT. Yes, sir. By the way, let me add, if I may, that the channel as far as it has been dredged runs entirely on city-owned property. When it goes beyond that point, when it passes that point, it is privately owned property.

Mr. SMALL. Now, I interrupted you for the purpose of making this statement and suggestion: The original report of Congress, Document No. 1488, Sixtieth Congress, second session, was construed

as only authorizing a project for 18 feet to the entrance of the channel.

Mr. HULBERT. Yes, sir.

Mr. SMALL. And around Jamaica Bay?

Gen. TAYLOR. The project as adopted by Congress.

Mr. SMALL. As adopted by Congress.

Mr. HULBERT. Yes, sir.

Mr. SMALL. And the adoption by Congress was thought to be in accordance with the report, because increasing the depth from 18 feet to 30 feet was construed, as I recall it, as requiring further legislation by Congress.

Gen. TAYLOR. Yes.

Mr. SMALL. Congress has never taken any further action, so that it is a fair assumption that the present project adopted by Congress is for 18 feet. But since then there have been two examinations. The last one, I believe, is contained in House Document No. 4, Sixty-sixth Congress, second session, containing two reports of the Chief of Engineers, one dated March 10, 1920, and the other dated March 18, 1920, and I referred to the last one particularly because that contains the recommendation. So that what you really are asking for now is legislation by Congress to change the original project from 18 feet to 30 feet through the entrance channel and through the inner channel as far as Mill Basin?

Mr. HULBERT. It may be construed as what is necessary, but that is not what I am asking. I do not know that it has ever been officially determined that the project as adopted by Congress confines its improvement to an 18-foot channel. What I understand, from my reading of House Document 1488, together with the act of June 25, 1910, is that Congress adopted the project for a 30-foot channel in Jamaica Bay, of which the 18 feet was then authorized to be constructed, the balance to be undertaken if and when the commercial interests should prove that it was necessary to do it.

Mr. SMALL. It is quite evident, reading from the last annual report of the Chief of Engineers, on page 265, that under the paragraph, "Existing projects," the Chief of Engineers has construed that action by Congress as follows. I quote his language from the paragraph:

It provides for making and maintaining a channel of the depth of 18 feet with a width of 500 feet at mean low water, to be increased as the needs of commerce require and as may be further authorized by Congress to a width of 1,500 feet for the entrance channel and 1,000 for the interior channel, and a maximum depth of 30 feet.

Mr. HULBERT. That is all right, Mr. Small. That is a statement contained in the report of the Chief of Engineers. But let me call to your mind that this committee reported a bill which was approved by Congress and which some members of this committee believe authorized the 40-foot channel to Hell Gate.

The Chief of Engineers, however, in construing the language of the bill, determined that it merely authorized a 35-foot channel, and this committee, on the motion of Mr. Dempsey, subsequently by further legislation supplemented that act by saying that this committee meant when it adopted that law to provide for a 40-foot channel. Now, it may be that the Chief of Engineers interpreted the language of this act in conjunction with the project contained in

House Document No. 1488 as merely authorizing an 18-foot channel, to be increased to 30 feet when further authorized by Congress, and he may very properly have done that as a matter of protection to himself. But I am asking of the Committee on Rivers and Harbors whether, when this was adopted in the bill June 25, 1910, the Congress of the United States did not intend, as the report of the engineers states, that this improvement was to be on a basis of 30 feet, the 18 feet to be provided, as the report states, for the purpose of bringing the material in there for the construction of the wharves, because otherwise was the Government playing fair to ask the city of New York to expend between \$13,000,000 and \$70,000,000 in the development of the project, as against the expenditure by the United States of \$6,000,000, and leave the city of New York to put up this money on a supposition that when it was completed it was to be for the accommodation of ocean-going vessels, when, as a matter of fact, it was to require further action by Congress to extend the channel from 18 feet to 30 feet, and we had gone on on the supposition that the 18 feet was for the purpose of getting the material up there, and that if we built our docks we could not get the ships if we did not get the further project depth.

Gen. TAYLOR. It has been 11 years since this project has been adopted, and during that time there has been a great deal of difference of opinion as to what use was to be made of Jamaica Bay.

Mr. HULBERT. I suppose there is.

Gen. TAYLOR. The officials of New York City have been considering having a barge proposition.

Mr. HULBERT. I have never heard of it.

Gen. TAYLOR. That is a fact.

Mr. HULBERT. Just a minute. No; you are calling my attention to something. Let me say that from the very inception of this, in so far as the officials of the city of New York are concerned, they have had an entirely different conception, because on page 17 of House Document 1488 there is a statement of Nelson P. Lewis, the chief engineer of the board of estimate and apportionment, who states that it is proposed to build docks there of the character of the Chelsea Piers. Now, the Chelsea Piers in New York, built for the accommodation of the Cunard Line and the International Mercantile Marine, are not the type of piers that New York City would contemplate erecting for a barge canal business. I have never heard that suggestion from anybody. Mr. Cleary has been a member of this committee, and he has been in the boat business for over 40 years, and he will tell you that he never heard the suggestion in his life that Jamaica Bay be used for a barge canal business.

Mr. CLEARY. I have never heard of it.

Gen. TAYLOR. That has been considered. It ought to show in the record. I know absolutely that that has been a fact. That, however, has not very much bearing on this particular question.

Mr. HULBERT. I want to ask the chairman if it is possible that the interpretation that the Chief of Engineers has placed on this project has been on the theory or supposition that it was merely going to be used as a barge canal. If that is so, then the interpretation of the Chief of Engineers has been based on a theory that is not consistent with the facts, so far as the agreement on the part of the city of

New York is concerned when they entered into this agreement some 11 years ago.

Now, Mr. Chairman, the city of New York put \$4,000,000 in the big pier at the foot of West Forty-sixth Street. It cost us \$4,000,000 to build that one pier, and when the pier was finished, although it was built with the idea of accommodating ships of the type of the *Maltic* and *Mauretania* and *Aquitania*, we had only 18 feet of water at the outer end of it, and we could not have gotten a ship in there that goes to sea. Fortunately we able on a special report made by Col. Taylor, and special action taken of the Chief of Engineers, and prompt action taken by this committee, to get it in the river and harbor bill of 1917, I think it was. One of our good friends opposed its consideration on the floor as a war measure, because he said that the war would be over before the work was done, but it was passed as a war measure and the channel was deepened as a war measure, and it was my privilege to turn that dock over to the Secretary of War as a war measure, and to see ships sent from that dock to sustain our Army in the field over in France.

Now, the city of New York built 8 or 10 docks up on the East River, between Seventeenth and Twenty-fifth Streets, about 14 years ago. I sat as a member of this committee, and I asked you and my colleagues to authorize the removal of Shell Reef, in order that the city might have accessibility to the pier for purposes of ocean commerce. I recall very well that we were advised at the time that the Government ought not to undertake the removal of Shell Reef. It is printed in the minutes—the statement I make now. We were advised that the Government ought not to undertake the removal of Shell Reef until the city of New York should provide rail connections or build railroad connections along the east side of Manhattan. No man living here or his grandchildren will ever see it provided, because it will never be provided. The physical conditions are such that it will never be provided. But I gave my pledge then as a member of this committee, if the committee would authorize and permit us to get the removal of Shell Reef under way at once, the city of New York would reconstruct those docks and erect modern steel sheds on them and equip them with electrical cargo-handling machinery; and we did. You gave us the authorization for the removal of Shell Reef. I did not know then that I was going to resign as a member of this committee and become dock commissioner; but as dock commissioner I have let the contracts and completed those piers. I have leased every one of them, and my lessees are ready to go in and take possession, but they can not get into possession because Shell Reef has not been entirely removed, and so the city of New York has lost the interest on the funds used in constructing those piers because we do not compel the men who lease them to take possession of them, because there is not enough water to permit them to get in.

That is the condition under which the city of New York has been trying to develop its water front. It has even gone ahead and constructed the piers and then paid for the dredging that the Government ought to have done itself. In the case of the Chelsea development it was necessary to remove a ledge on the outer end of the pier. When the piers were finished we could not get authority of the

Government to do it, and the Government compelled the city of New York, when it gave the city authority, compelled it to sign an agreement that it would never ask the Government for reimbursement. We signed the agreement and did the dredging that ought to have been done by the United States.

Mr. SMALL. I did not intend to combat what appears to be your wish to have 30 feet through the entrance channel, through the inner channel as far as Mill Basin. What I was trying to do was to be helpful and to get it upon a basis by which Congress could be helpful, and I meant to call your attention to the fact that this subcommittee has only appropriating jurisdiction.

Mr. HULBERT. Yes, sir.

Mr. SMALL. All legislative jurisdiction remains with the Committee on Rivers and Harbors. I believe my own personal judgment is that you are entitled to have the original project modified and 30 feet authorized and the available appropriation for the 18-foot project made available for the 30-foot project at least, so that you may proceed. My individual opinion is that legislation would be necessary, and that if the River and Harbor Committee intend to report a bill at this session, which I hope it will, I believe that it will be willing to include in it a brief provision to that effect. That would give you something like a half a million dollars available from Federal appropriation.

Mr. HURLBERT. Correct.

Mr. SMALL. To say nothing of the cooperation proposed by the city of New York.

I was going to make one more suggestion. You have discussed other matters, and I was going to ask you when you had concluded your remarks just to summarize the concrete propositions that you wish to submit, because you have discussed it generally. If there was another concrete proposition except the one regarding Jamaica Bay—

Mr. HURLBERT. Are you speaking now of the question of appropriation or new legislation?

Mr. SMALL. Either one that you have in mind.

#### EAST RIVER, N. Y.

Mr. HULBERT. The thing that brought me in this morning when I heard that you were sitting was to urge the particular necessity at this time of giving us the appropriation asked for by the Chief of Engineers, particularly for the Hell Gate improvement, because we realize that by just so long as the Hell Gate improvement is delayed there will be a consequent delay in the construction of the dollar steamship terminal in the Bronx and the terminals which the city has in contemplation in Jamaica Bay. In other words, what we are doing now is contingent upon what we suppose the period will be within which the Government will finish the 35-foot channel to Hell Gate.

Gen. TAYLOR. In that connection, I want to ask you a question which I think has a very important bearing on this very matter of which you are speaking. As you doubtless know, we have been working on that East River project and making new surveys and examinations and estimates.

Mr. HULBERT. Yes, sir.

Gen. TAYLOR. We find now that to complete the 40-foot project through the East River will require appropriations in addition to those that have been made of some \$72,000,000, while to complete the 40-foot project up to the navy yard and a 35-foot project beyond there will require appropriations of only \$39,000,000, which is a saving of \$33,000,000, and what is equally as important as the saving of money is the saving of time. If we work on the 40-foot project, as you know we can not get down to 35 feet and then go to 40 feet in the rock of the character we are excavating in New York. If we work on the 35-foot project from the navy yard east, that can, as you stated, be completed in two or three years. If we work on the 40-foot project it is going to be a good deal more than three years before you get 40 feet.

Mr. HULBERT. Are you not working on the 35-foot project in Hell Gate?

Gen. TAYLOR. Forty feet.

Mr. HULBERT. Then I have been misinformed by your engineering department in New York.

Gen. TAYLOR. We have been working on 35-foot projects, yes; but all future work is to be 40 feet. That is the project at the present time. It means a great addition in money and a great addition in time in order to get any such channel through there. That is the point I am making.

Mr. HULBERT. If the money was spent by the Naval Committee instead of the Committee on Rivers and Harbors, it would still come out of the Federal Treasury?

Gen. TAYLOR. Yes; but a 35-foot project through East River is perfectly satisfactory to the Navy.

Mr. HULBERT. I can not speak for the Navy.

Mr. SMALL. Above the navy yard?

Gen. TAYLOR. Above the navy yard.

Mr. HULBERT. It was at the particular instance of the Navy Department that the 40-foot channel was provided. We all see by this morning's paper that the 110-foot locks of the Panama Canal are not going to be sufficient to accommodate the new battle cruisers that are being built by the Secretary of the Navy. Now, I just ask you to take into account in connection with all the talk you hear about disarmament—I would like to see a general agreement among the nations of the earth for disarmament. Until you get down to the provisions for the concrete agreement for disarmament the best way to enforce it, in my judgment, is to keep on building battle-ships, just as I think that the best way to avert war is to keep on being prepared for it until we get a universal agreement that everybody stops at once.

Gen. TAYLOR. Here is the concrete situation with reference to that East River project. The Navy is satisfied with the 40-foot project up to the navy yard and 35-foot project beyond there, and the 35-foot project will probably meet the needs of commerce for more years than we can look forward to, for the reason that the large vessels are going to use the tide to a very great extent; that is, they are going through there on high-water slack without regard to what you have through there. With 35 feet at low water you have over 40

feet at high water, and the saving in time and money looks to me as though it was worth considering.

Mr. HULBERT. I grant you that it is worth considering, and I would like to consider it before I give any answer, so far as I am concerned; not that my opinion has any weight at all.

Mr. DEMPSEY. I am going to make some suggestions in a little different way.

Mr. HULBERT. I want to ask if this money that you would save in limiting the channel through Hell Gate to 35 feet instead of 40 feet will be spent in Jamaica Bay and Flushing Bay?

Gen. TAYLOR. If the river and harbor bill is to be a fixed number of millions of dollars, whatever money you do not appropriate for East River you will have available for somewhere else.

Mr. DEMPSEY. I think you have got to consider Hell Gate as a 40-foot channel, and until the city of New York would advise us in some way that they want to modify it, I do not believe it will be modified without the consent of the city of New York.

Now, I do think, and was going to call your attention to the fact, that the first matter before this subcommittee is that you would not have the 40-foot channel through in the time that you anticipated. That was the first thing to which I would direct your attention. The second thing is Flushing Bay. That is in the hands of the district engineer.

Mr. HULBERT. Yes.

Mr. DEMPSEY. And so there is nothing for us to consider in relation to it.

Mr. HULBERT. Until the report comes in, and then it will be a question of legislation.

#### JAMAICA BAY, N. Y.

Mr. DEMPSEY. The third thing is Jamaica Bay, and it seems to me that that presents itself in two aspects—first, what is the proper construction of that report. Of course, we are not bound by the construction of the Chief of Engineers, while we would pay all deference to it as a report of a coordinate branch, and give it such weight as we considered it to be entitled to in view of the language, but the ultimate construction would be for Congress. There is not any doubt about that at all, and your first argument is that that has been given an improper construction, and that the project as adopted is really a project for 30 feet. Now, that, of course, is for the committee to determine what that means.

Mr. SMALL. It really means legislation.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. I would like to say, Mr. Dempsey—

Mr. DEMPSEY. Not at all; it is a question of construction. Construction is not legislation. If we hold, and the House agrees with us, that the project as adopted, despite the construction of the Chief of Engineers, that it did in fact mean 30 feet—

Mr. SMALL. That is legislation still.

Mr. DEMPSEY. No; construction is not legislation.

Mr. SMALL. It requires legislative action.

Mr. DEMPSEY. I do not think so.

Mr. DAVIS. It will depend upon the man sitting in the chair.

Mr. DEMPSEY. If that was a project for 30 feet as adopted, it was a project for 30 feet.

Mr. SMALL. You mean this subcommittee can determine it?

Mr. DEMPSEY. I mean if we adopted the view—I will not say that we will—I am in a short way summarizing what I think to be Mr. Hulbert's position. I say first he contends that the true construction of that report is that it meant 30 feet, that it only meant 18 feet temporarily, and that 30 feet was to be obtained as soon as the interest of commerce required it, and the question of whether or not the needs of commerce require it is a question for this committee. But, on the other hand, the Chief of Engineers takes the view that we adopted only an 18-foot project, with an intimation that we would adopt a 30-foot project at a future time. That squarely presents the question of which it was, the adoption immediately of an 18-foot project, with the further adoption of a 30-foot project when the needs of commerce required it, or simply an intimation that we might adopt the greater project at a future time.

The second question is this: Suppose that the committee should agree with the Chief of Engineers, the question is how can you most expeditiously obtain what you want. If Mr. Kennedy will present a bill—and I do not know whether he has determined to present a bill or not—but if he will present a bill, there is not any doubt in my judgment at all that he would favor your project, and that he would put it into the bill, and if it went into his bill, and the bill could be presented either previously or simultaneously with our bill, we would conclude your proposition with this bill.

Gen. TAYLOR. I think, Mr. Chairman, Mr. Hulbert is not so much interested in the appropriation at this time.

Mr. HULBERT. Yes, I am.

Gen. TAYLOR. Because we have \$500,000 on hand.

Mr. HULBERT. I have stated my position so far as the bill is concerned.

Mr. DEMPSEY. I do not think you have stated your position, because you said you wanted to wait before completely answering; inferring a modification.

Mr. HULBERT. On the contrary, I have stated my position that I would like this committee to appropriate as much money as it can for the Hell Gate development.

Mr. DEMPSEY. In other words, you are planning for improvements on the Hell Gate in anticipation that the improvement to Hell Gate and Flushing Bay will be completed?

Mr. HULBERT. That is it, exactly.

Let us get back to Jamaica Bay for a moment. This is what I would like to ask, so far as Jamaica Bay is concerned. On the theory that Congress adopted a project for a 30-foot channel, but limited the prosecution of the work to a depth of 18 feet until the necessities of commerce should demonstrate that a 30-foot depth was justifiable, I would like, on behalf of the city of New York, to ask your subcommittee on appropriations if they will not consider the advisability of inserting in the appropriation bill an authorization to the War Department that the \$400,000 available balance may be used for beginning work on the 30-foot depth, upon the ground that the time



has now arrived when we need the 30-foot depth to meet the commercial requirements of the present as well as the future, and that the city, in view of existing conditions, be reimbursed at the rate of 12 cents instead of 8 cents per cubic yard. That is the concrete proposition that I wanted to present here.

Mr. DEMPSEY. I will say very frankly that it seems to me that this subcommittee has got to take one of two positions, and I think they will take the position based on precedent, if they can find a precedent, that it was the adoption of the whole project. If there is a precedent to sustain it, we will take that position, in my judgment. If, on the other hand, the precedents are the other way, we will follow the precedent, and if we follow the precedent, I do not think we could do what you suggest, but we would have to proceed in the way that has been outlined, and that is by asking Mr. Kennedy to bring in a bill authorizing this legislation. Do you not think that is the legal position?

Mr. CLEARY. May I interject? I just want to call your attention to this, inasmuch as he has brought my name into this, and that is that there could be no purpose for an 18-foot channel.

Mr. DEMPSEY. But you must have thought there was a good purpose when you adopted the project?

Mr. HULBERT. It was only temporary in character.

Mr. CLEARY. I own 100 barges, and I have been in the business in New York Harbor for 40 years. I have hired barges and bought and leased them, and brought them into Jamaica Bay before any legislation by Congress. There is nothing in the 18 feet. The 18 feet of water would not change the situation. You never load barges over 9 feet. You might as well have left the channel as it was. The intention of Congress was to make it so that ships could come in there, not scows. Barges have always been in there and they always will go in there, because there is about 6 feet tide in New York Harbor, and if there was only 3 feet they could come in and out on high tide. What is the use, under such circumstances, of talking about an 18-foot channel? It would be for nothing unless it was for ships.

Mr. DEMPSEY. It seems to me that there must be precedent for action of the House on reports similar to this where a project was adopted to prosecute it to a certain depth at a given time and then to a greater depth under changed conditions. Now, it seems to me that the House itself must on several occasions have construed provisions of that kind as to whether that meant an adoption of the project similar but of a lesser depth or the adoption of a greater depth when Congress in its judgment should find that the conditions outlined in the report required it.

Gen. TAYLOR. I can tell you another case that is parallel to this, and that is the Chesapeake & Delaware Canal, which is started as a 12-foot sea-level canal. But to take Mr. Hulbert's contention, it is a 25-foot canal. The report says that the 12-foot canal will be built as the first step toward the 25-foot canal. I think the language is almost identical in these two cases.

Mr. DEMPSEY. That is all right so far as it goes, but it does not reach a point that helps us at all. In both the cases you cite you are selecting simply the first step. Now, there must be cases where you have reached the second step, and where the House has construed the

report, when it comes to a 25-foot canal or where it comes to 30 feet in Jamaica Bay.

Mr. HULBERT. Do not let us confuse this situation with the Chesapeake & Delaware Canal, for this reason, in recommending the depth of 12 feet in the Chesapeake & Delaware Canal, the Chief of Engineers said that he did that on the theory that so far as the 12-foot depth was concerned it was a national project. Now, if he says he is going to extend that depth to 25 feet, that is a question of local cooperation. In other words, the conditions incident to the extension of the depth to 25 feet require taking into account extraneous matters that do not touch the surface of the question at all so far as the 12-foot channel is concerned. In that case it will be absolutely impossible to go the 25 feet unless you first get an agreement with the States of Maryland, Pennsylvania, and Delaware.

Mr. DEMPSEY. It is not possible for that to be in point anyway. What we want here is where the second step has been taken. Now, that has not been done in the case of this canal.

Mr. HULBERT. No.

Mr. DEMPSEY. Now, are there cases where the second step has been taken by the House without going back for a second report?

Mr. HULBERT. Yes; the Hell Gate case is one.

Mr. DEMPSEY. If that is so, that there are cases where the House has acted without the second report and on the ground that the report was adopted not only in the first step but the second, that is a precedent for us.

Gen. TAYLOR. If it is not entirely clear to you what the position of the engineering department is, I will explain that the position is that the money was appropriated for the 18-foot channel, and we do not consider that we have authority to use that for the 30-foot channel without further authority from Congress. That is the only question.

Mr. HULBERT. Now, Mr. Chairman, let me emphasize one thing more. The talk of the day is economy. Now, economy may be shown in refusing to spend money for something that you do not need, and it also may be shown in spending money to prevent waste. Now, there is \$450,000 available. Now, there is not a day that goes by that I do not have some of the prominent citizens on my back urging me to let a contract.

Mr. DEMPSEY. Mr. Hulbert, if you will suspend one moment.

Mr. HULBERT. I am through. I merely want to say to you that I am holding up the work on the dumping ground below the basin, because I think it would be a waste of money to do it.

Mr. DEMPSEY. We are going to do all we can to help you.

Mr. HULBERT. And we are spending \$30,000,000 at Stapleton, and we are not asking for any Government cooperation.

#### **STATEMENT OF HON. WALTER E. EDGE, UNITED STATES SENATOR FROM NEW JERSEY.**

Senator EDGE. I am glad to have the opportunity of appearing here before you and bringing to you an invitation from the Traffic Club, of Newark, a very live-wire organization, which some of you, I think, know—you, I am sure, Congressman Small. They have arranged

what I think will be not only a very interesting but helpful inspection trip of New York Harbor and New York Bay and the tributaries going into Newark for Saturday of this week. They have asked the Senate Committee on Commerce to go as their guests to-morrow, leaving at 1 o'clock, or at any time that is convenient to the members. Most of them are leaving at that time. Nine members of the Senate Committee on Commerce have accepted the invitation. They will spend the night in Newark and on Saturday morning will go on one of the fabricated ships of the Submarine Co. and will be taken around the harbor and various points of interest will be shown to them. They have asked me to extend the invitation, and while it is late it does not mean anything except it was overlooked. They extend the invitation to your committee, who, as I understand it, have charge of the appropriations for rivers and harbors work.

Mr. SMALL. We are sitting as a subcommittee of the Committee on Appropriations.

Senator EDGE. If you could find it at all possible to make that trip I am sure that the information you would receive would be of great value and you would thoroughly enjoy the trip. They are great hosts. The House Committee on Rivers and Harbors made the same trip last year as their guests. Mr. Small, as I remember, was there.

Mr. DEMPSEY. Senator, we are very greatly obliged to you. We are in this situation, are we not, Mr. Small, that we are not only sitting every day but we have got to sit all day Sunday in order to get our reports in if possible Monday, and I very much fear that we will not be able to suspend on that account. What do you say?

Mr. SMALL. That is the situation. Personally, I would like very much to go. You were not on that trip. Mr. Dempsey is prospective chairman of the Rivers and Harbors Committee in the next Congress.

Senator EDGE. It would be very helpful if you could go. I think they understand your problem. You must balance, of course, between the responsibilities and the opportunities. There is not any greater responsibility in the way of development of rivers and harbors than the great port of New York and all about it, not only in connection with the money that we spend there but on account of its great possibilities in the international trade, and the chairman of this committee would be spending a very profitable 10 or 12 hours in this way. Of course, you can go to New York Harbor at any time, but you can not get in and out of it in this way, in the way that they will take you.

Mr. DEMPSEY. It will depend on the program in the House and when we will have to have this report in. We are very greatly obliged to you.

Senator EDGE. Of course, you are the guests of the Traffic Club from the time you leave until you get back.

---

JANUARY 13, 1921.

SAVANNAH HARBOR, GA.

Mr. DEMPSEY. The next is Savannah Harbor. There is an estimate of half a million dollars for maintenance, \$662,000 for further improvement, with \$425,000 on hand—\$235,000 in cash and \$190,000 in outstanding contracts.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Now, the tonnage there is nearly 2,000,000, with a value of very nearly \$600,000,000.

Gen. TAYLOR. Yes.

Mr. SMALL. They are entitled to as much of that estimate as it is practicable to allow.

Mr. DEMPSEY. Well, now, your estimate is \$500,000 for maintenance dredging?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And the balance for new work on the project?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And that new work consists of \$300,000 for repairs to the training walls and jetties, and the rest for operation of two dredges, plus overhead. That is about what there is to it, is it not?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Now, the project is for a channel 30 feet deep, 500 feet wide, from the ocean to the quarantine station, 10 miles; 26 feet deep, 400 to 500 feet wide to the city waterworks, 15.8 miles, and 21 feet deep and 300 feet wide to the foot of Kings Island,  $1\frac{1}{2}$  miles, making a total length of 27.5 miles.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is 52 per cent completed, I see.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. All of the 21-foot section is completed except 2,000 feet, and there we have a depth of 17 feet.

Gen. TAYLOR. That is in the upper part of that part that has not been finished.

Mr. DEMPSEY. Yes.

Mr. SMALL. That is, from the city waterworks to the foot of Kings Island.

Gen. TAYLOR. Yes.

Mr. SMALL. The depth there is 21 feet.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. The 26-foot depth has been completed, but it shoaled some.

Gen. TAYLOR. Yes.

Mr. SMALL. The report shows you fell off to 21 feet on the 26 feet.

Gen. TAYLOR. During the last two or three years the channel has shoaled more rapidly than we have been able to dredge it; consequently the actual harbor has been very much handicapped. We are getting a new dredge which is just getting ready to operate. It is a dredge which we took over from the Construction Division. They brought it up from Habana to work on the Charleston Terminal. After they got the dredge up there they found it was not suitable for the character of work they had for it and so we took it over and paid them the price they paid for it, practically, and had it entirely rebuilt and now have it in first-class condition and expect to begin operation this month.

That in addition to the plant we had there before will enable us to catch up with the dredging and restore the project depths and, if we have sufficient money, probably be able to go ahead and gain some on the new work.

Mr. DEMPSEY. The controlling depth on the 30-foot section is 24.2 feet, I see, page 694, at the end of the third paragraph.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. So long as the jetties and dikes are in bad condition there is going to be a very large amount of shoaling in that harbor, is there not?

Gen. TAYLOR. There is; yes, sir.

Mr. DEMPSEY. Now, if you had enough money to repair the retaining walls and jetties, and did that during the coming fiscal year, you could then go to work on your question of dredging with the amount of shoaling to a minimum, so far as it is possible in that harbor.

Gen. TAYLOR. That will help reduce the shoaling at certain portions of the river, but it is not going to stop it altogether.

Mr. DEMPSEY. But it will be the minimum that you can attain.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And would not that work of repairing the jetties and dikes take the greater part of the year, and would not the dredging during that time or previous to that repair work, be work that you would simply have to redo?

Gen. TAYLOR. You would have to do it anyway, but the conditions are such, Mr. Chairman, that we could not possibly stop our dredging without allowing commerce to be interfered with. We have to go right along and do our dredging just the same. It is continuous shoaling, and unless we continually dredge, the shoaling will be bound to be such that it will interfere with navigation. After we get the jetties finished then we hope the shoaling will be at a less rate, but we can not stop dredging for maintenance while we are building or repairing those jetties and dikes.

Mr. DEMPSEY. Now, your repairs to the training walls and jetties will be made a good deal of concrete?

Gen. TAYLOR. No; no concrete. Rock. No concrete in that.

Mr. DEMPSEY. Where do you get the rock?

Gen. TAYLOR. It comes from the central part of the State, probably.

Mr. DEMPSEY. I supposed it was cheaper and better practically everywhere in the United States to use concrete.

Gen. TAYLOR. Oh, no; we can get rocks such as we put in there at the outside \$2 or \$3 a yard. Concrete will cost \$8 or \$10 a yard at the best you can do. You have your rock crushed to small sizes in the first place, and a yard of crushed rock is more expensive than the large rock such as we use in jetties, that we just gather out of the quarries, random stone. Then, in addition to the rock, you have the sand and cement. The cement has been costing \$3.50; probably now you can buy it for about \$2.50, and in every yard of concrete you use a barrel or more of cement, so a yard of concrete would be made up, say, of a yard of rock, and one-half a yard of sand and a barrel of cement, the sand and cement making with the water the mortar which fills the voids in the rock, and in addition to that you have your labor in mixing, and then it would be impossible to lay it under water—well, not impossible; you could make concrete blocks and drop them overboard, but concrete would cost two or three times as much as the rock.

Then it comes to capping the jetties, we frequently use concrete, because the cap is above the water, and we make the concrete in

blocks, and it makes a more substantial structure than anything we can do in rock, unless you use very large rock, which would then become expensive. The rock in the body of the jetty is small size, weighing anywhere from 200 pounds to a ton or so.

Mr. DEMPSEY. Now, you expended down there last year on the 21-foot channel, \$240,000, or is that on all projects—page 697.

Gen. TAYLOR. That is the total for all work on the 21-foot project up to the end of the last year.

Mr. DEMPSEY. I see; you expended \$269,000 for new work and \$479,000 for maintenance, making a total of \$748,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You have got just about the same for maintenance on hand—

Gen. TAYLOR. We had \$486,000 available and \$398,000 covered by contracts. We have now \$235,000 on hand, available, and \$190,000 covered by contract. That is, our contract liabilities are \$200,000 less and our available balances are \$250,000 less, showing expenditures since the 1st of July of practically \$450,000.

Mr. DEMPSEY. Well, what do you say is the least that you could do with for maintenance there and yet keep the—

Gen. TAYLOR. I think the item that is given there, \$500,000, is as little as we can possibly get along with for maintenance.

Mr. DEMPSEY. What do you say about the question of advisability?

Gen. TAYLOR. I think it is a project that certainly is a very worthy project, and the work should be prosecuted upon it as rapidly as possible. I should place both of those items in the essential class.

Mr. DEMPSEY. Now, supposing we had to cut all of these appropriations, Philadelphia, New York, Boston, Charleston.

Gen. TAYLOR. Well, whatever cut you make will have to be in the item for further improvement. Whatever is allowed for that item will be expended when it is available for the purposes where it will do the most for the advancement of the work, taking further maintenance into consideration.

Mr. DEMPSEY. How much of that \$425,000 on hand is available for maintenance?

Gen. TAYLOR. The \$235,000 that was on hand the 1st of December?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. All of that is available for maintenance.

Mr. DEMPSEY. And how much of the \$190,000 under contract is for maintenance?

Gen. TAYLOR. Well, there is none of that.

Mr. DEMPSEY. Do you figure on doing any more work there this coming year than you did last year?

Gen. TAYLOR. Yes; we must do more work.

Mr. DEMPSEY. I mean in the way of maintenance?

Gen. TAYLOR. Yes; we must do more work. The reason we did not do more last year was the fact we did not have plant available. With this additional dredge, that I have just spoken of, we will have plant enough to carry on the work at a rate which we hope will gain on the shoaling, so we will be able, not only to take out all of the shoaling that occurs this year, but take out some of the shoaling which has occurred during the past two or three years. The

channel has been in very bad condition; it is not only shoaling, but it has been very narrow, so that ships coming in have been seriously handicapped, have had a great deal of difficulty. I know of no harbor where they are doing as much business as they have there, where the conditions are as bad as they are in that channel. I think that can be stated without any qualifications. There is no harbor in the United States where they are doing as great a business on as difficult a channel.

Mr. DEMPSEY. Let us see; the sea channel is 500 feet wide—that is, the 30-foot channel. The 26-foot channel to the waterworks is 400 to 500 feet wide?

Gen. TAYLOR. Yes; but you will notice that the report also says that to obtain a channel of that dimension requires removal of over 7,000,000 yards of material, in addition to such shoaling as may take place up to the date of completion.

Mr. DEMPSEY. That is depth, is it not? So far as you have excavated you have excavated to the project width, have you not?

Gen. TAYLOR. No, sir. It is stated here that the 26-foot section of the channel off of the Seaboard Airline Railway bridge to quarantine has been improved to project dimensions, the entire section at different times, but never throughout at the same time.

Mr. DEMPSEY. And the shoaling occurred very rapidly, requiring constant maintenance in dredging and restoring the dimensions.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I mean this project width would fill in so that the depth is 22 feet instead of 26?

Gen. TAYLOR. Yes. That is, we have a channel 22 feet deep—well, at the end of the year we did not even have a channel the project width of 22 feet deep. The 22 feet refers to the controlling depth, which is along the center of the channel. Along the sides of the channel it is filled in to even a lesser depth than 22 feet.

Mr. DEMPSEY. What do you say about this, Mr. Small? Any questions?

Mr. SMALL. I am satisfied from my study of the Savannah Harbor that the appropriation ought to be made in accordance with the estimates, if it is possible to do it. It is the only harbor about which I have felt I ought to say that of all we have examined so far.

Mr. DEMPSEY. They have project depth?

Mr. SMALL. No, sir.

Mr. DEMPSEY. But they have the project width?

Gen. TAYLOR. They have had it at times, Mr. Chairman. I know they did not have a channel 22 feet deep of the project width.

Mr. DEMPSEY. You mean it is filled in at the sides?

Gen. TAYLOR. It is filled in at the sides more than it is in the center, because our work has been around the center of the channel, endeavoring to keep open as wide a channel as we could, taking it out of the center first.

Mr. DEMPSEY. You say the limit of draft of the vessels there, page 697, greatest draft 24 feet?

Gen. TAYLOR. Well, with only a 22-foot channel they can not draw much more than that. There are some that drew 26 feet, you see. Twenty-seven per cent of all, you see, were from 18 to 26 feet draft. The coal-carrying vessels drew from 15 to 26 feet.

Mr. DAVIS. The next item is Savannah River, below Augusta, Ga., page 699.

SAVANNAH RIVER, BELOW AUGUSTA, GA.

Gen. TAYLOR. That is the item which Mr. Vinson came in yesterday and asked that the \$38,000 be given in addition to this \$96,000.

Mr. DEMPSEY. Well, that can be deferred until a time when they get some commerce there.

Gen. TAYLOR. That additional \$38,000. It certainly would not interfere with commerce.

Mr. DEMPSEY. Now, what about this \$36,000?

Gen. TAYLOR. I think that should be allowed. If they ever have any opportunity to revive commerce on that river—and they claim they are going to put boats on it—the snags must be kept out of it, and if we do not keep them out continually they make very bad shoals, and they are then very difficult to take out. The longer they stay in the more they accumulate and the more expensive they become to remove. They become imbedded in the stream and snarl up in bad tangles and are very expensive to take out in addition to the fact that they have a very detrimental effect on the channel. And then they may cause changes in the channel.

Mr. DEMPSEY. That is a 5-foot channel?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I have always had some question about these streams that are only 4 or 5 or 2 or 3 feet—just how useful they can be?

Gen. TAYLOR. They can be useful in the way of furnishing transportation locally. When it comes to through commerce from Savannah to Augusta, for instance, by the river it is possible there may be commerce of that kind, but it has to be carried on as a business, the same as any other business is carried on at the present day, by well-established concerns operating boats that will run on schedule. That is, in order that it may be a real factor in transportation.

Mr. DEMPSEY. It is a completed project, completed in 1915, I see.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. How can we run a 16 to 19 foot boat up a 5 foot stream, as seems to be the case on page 701?

Gen. TAYLOR. That is the lower portion of it.

Mr. DEMPSEY. Where there is a deeper draft and tide?

Gen. TAYLOR. Yes, sir. That is up to the sugar refinery, a short distance above Savannah.

Mr. DEMPSEY. Do you think there is anything there except logging, except on the lower part?

Gen. TAYLOR. Last year there was nothing except sugar, which was carried up to the sugar refineries in the vicinity of Savannah, and the lumber on the upper part of the stream.

Mr. DEMPSEY. What do you say about the \$36,500?

Gen. TAYLOR. Well, I do not think any business would be interfered with next year if that is cut down a good deal.

Mr. DEMPSEY. \$16,000?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. \$16,000.

Gen. TAYLOR. \$16,000.



Mr. DEMPSEY. The next item is waterway between Beaufort, S. C., and St. Johns River, Fla.

WATERWAY BETWEEN BEAUFORT, S. C., AND ST. JOHNS RIVER, FLA.

Now, that is practically a part of the intracoastal waterways.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The project is for a channel 7 feet deep and 100 feet wide; 150 in open waterways.

Mr. DAVIS. Do you have any trouble on rivers of this kind during the spring or any time, by freshets or overflows or anything of that kind?

Gen. TAYLOR. Yes, sir; but that is a flood-control situation.

Mr. DAVIS. Well, it interferes with your channels, of course.

Gen. TAYLOR. Well, during the high water the channel is much deeper and boats run much better, except for the difficulty of working upstream against the current.

Mr. DAVIS. Does not soil wash in from the sides?

Gen. TAYLOR. That is what causes the shoaling when the river goes down. During the high water there is no difficulty in navigation; in fact, many of these streams are only navigable during the high-water stage. Then, as the river goes down the shoals that are washed in during the high water interfere with navigation.

Mr. DEMPSEY. I see your estimate here is for proposed operations of a pipe-line dredge nine months and repairs to the dredge.

Gen. TAYLOR. That is what is proposed to do with the funds already available.

Mr. DEMPSEY. Oh, yes. For the future, the next year, your proposal is the operation of a dredge 14 months, tender of a dredge 14 months, repairs to dredge and auxiliary plant, and overhead, making this total of \$85,000, and you have on hand \$38,000.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. What can you get along with in addition to that \$38,000?

Gen. TAYLOR. Well, the average expenditures for several years past have been something under \$40,000. Due to the increased cost of carrying on work now I think we should have at least a little more than the average expenditure, which has done practically nothing but maintain the channel—that \$40,000.

Mr. DEMPSEY. You think that \$40,000—

Gen. TAYLOR. I think \$40,000 in addition, because those expenditures are for the fiscal year. All we have on hand now, the \$23,000 that is available, will be used up by the end of this present fiscal year—that is, by June 30, 1921—leaving us \$40,000, which would carry us during the fiscal year ending June 30, 1922.

Mr. SMALL. Then you think this estimated \$85,500 may be reduced to \$40,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, the next is the group consisting of Sapelo Harbor, Ga., and Darien Harbor, Ga., and Satilla River, Ga., and St. Marys River, Ga. and Fla.

## SAPELO AND DARIEN HARBORS, GA., SATILLA RIVER, GA., AND ST. MARYS RIVER, GA. AND FLA.

Mr. DEMPSEY. There is nothing on hand in any of those?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. The traffic in the first item, Sapelo Harbor, is very small, 2,500 tons; on the other hand, Darien Harbor has 54,000 and Sapelo River has 46,000 tons, and St. Marys River, Ga. and Fla., 39,000 tons.

Sapelo Harbor is 17-foot channel, with width of 150 feet, which has been completed. Six thousand dollars is proposed to be spent for maintenance dredging, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, Darien Harbor, Ga., is a 12-foot project, which the department thinks should be 150 feet wide, and it is proposed to use that \$6,000 for dredging, page 718, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And on the Satilla River there does not seem to be any project depth there, none mentioned, on the existing project.

Gen. TAYLOR. That is simply a snagging project.

Mr. DEMPSEY. And you propose to use the \$2,500 for maintenance work?

Gen. TAYLOR. Yes, sir; for snagging.

Mr. DEMPSEY. And St. Marys River, Ga. and Fla., is for a 17-foot project 200 feet wide, and you propose to use the \$15,500 for maintenance?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, taking those separately, what do you say as to the four items?

Gen. TAYLOR. Well, without specifying a reduction, I think that could be reduced by one-third; that is, the total could be reduced to \$20,000.

Mr. SMALL. Now, it is unnecessary to specify the reductions in each item, because as they are in one group you can expend them—

Gen. TAYLOR. We can distribute it as most necessary. I should not like to take any one of them and say how much we could reduce it, but I am satisfied from previous experience that you could reduce that by \$10,000 and still reasonably maintain the projects.

Mr. DEMPSEY. Now, there are three items grouped together below that—the Altamaha, Oconee, and Ocmulgee Rivers, Ga.

## ALTAMAHA, OCONTEE, AND OCMULGEE RIVERS, GA.

Mr. DEMPSEY. There is \$7,000 in the first item.

Gen. TAYLOR. What has actually developed down there is there is no through commerce on those rivers. They have been endeavoring to establish a through commerce; the towns along the river have shown very good spirit, and have actually obtained and purchased some self-propelled barges and put them on the river, but it has not turned out to be a practical business proposition. What has developed, however, is that there are a number of sawmills along the river, and those sawmills cut the trees on the river and carry the logs to the mills a few miles away.

Mr. DEMPSEY. Are there any railroad facilities along there?

Gen. TAYLOR. The river is crossed by railroads at different points, and it is to these railroad points that the forest products are shipped.

Mr. DEMPSEY. Now, this report here is some report you made recently?

Gen. TAYLOR. This is a report dated January 23, 1920.

Mr. SMALL. This is really one river system.

Mr. DEMPSEY. I see.

Mr. SMALL. The Oconee and Ocmulgee and the Altamaha.

Gen. TAYLOR. Now, in transmitting the report the chief engineer states:

The only important interests concerned at present are connected with some form of the lumber industry, which depends largely on procuring timber from the lowlands bordering these streams. A thoroughly cleared river will permit this to be done, and this can be accomplished at reasonable cost. To permit the channel to be cleared of snags and to keep it in good condition, however, calls for a better equipment than is now available. There should be at least one good self-propelling snag boat available for use in each of the forks, where they might work on bank-clearing and snagging operations until driven out by freshets. Thereafter they might work on the main stem of the river, which is less subject to short, sharp freshets. In any event, two efficient snag boats should be sufficient to give a dependable channel and to permit the existing business of barging and rafting to be conducted with little, if any, avoidable interruption.

11. While the amount available under the existing project, \$40,000 annually, will be enough to operate these two snag boats, only one of them exists at present and this one requires repairs estimated to cost \$25,000. The second new snag boat will cost about \$75,000. The board, therefore, recommends that hereafter work on the Altamaha, Oconee, and Ocmulgee Rivers be confined to thorough snagging and bank clearing, and that to enable this to be efficiently done there be appropriated \$100,000 for the construction of one new snag boat and the repair of the old one at present available, and \$40,000 annually for their operation.

In other words, that recommends an annual appropriation for those three rivers of \$40,000 after the plant has been obtained.

Mr. DEMPSEY. Now, let us see what they have here.

Gen. TAYLOR. At the present time we have only one snag boat. That snag boat needs overhauling, and for that overhauling and this operation for a year there would be required approximately \$40,000, and unless money is provided for the second snag boat the \$40,000 would be sufficient.

Mr. SMALL. For the three streams?

Gen. TAYLOR. For the three streams; yes, sir.

Mr. DEMPSEY. Now, the next item is Brunswick Harbor, Ga.

#### BRUNSWICK HARBOR, GA.

Mr. DEMPSEY. There seems to be quite a large commerce—390,000 tons—with a value of \$75,000,000, Brunswick Harbor.

Mr. SMALL. A comparatively new project.

Mr. DEMPSEY. Now, you have on hand there, Gen. Taylor, about \$465,000; that is, \$408,000 in cash and \$58,000 in outstanding contracts?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And the estimate is for \$50,000 for maintenance and \$150,000 for further improvements?

Gen. TAYLOR. Yes, sir. When the project of the present dimensions was adopted by the 1919 act we contemplated the possible construction of a seagoing hopper dredge similar to those I have already spoken of.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. We found, however, that conditions were such at the mouth of the Mississippi it was not possible to use these two dredges down there.

Mr. DEMPSEY. You do not mean the Mississippi?

Gen. TAYLOR. Yes; I mean the mouth of the Mississippi. We had two dredges which had been used at the mouth of the Mississippi.

Mr. DEMPSEY. Oh, yes; I see.

Gen. TAYLOR. Instead of continuing operations with the dredges and using our money in that way, it was more advantageous to put it into the dikes and jetties, and that released those dredges. One of them we transferred up to Brunswick Harbor and are using it there, and that makes unnecessary the construction of a special dredge for that harbor.

Mr. DEMPSEY. That was the \$150,000 item?

Gen. TAYLOR. No; I am speaking of what happened in the past. We also expect to transfer another dredge there, so that in a short time we will have two dredges working on the bar.

For the operation of those dredges we will require this additional money, as well as the money we have on hand.

Mr. DEMPSEY. Well, let us see; what did you spend last year?

Gen. TAYLOR. We spent very little last year, because we had no dredges available.

Mr. DEMPSEY. Well, when was this project adopted?

Gen. TAYLOR. It was adopted by the 1919 act, but it was not until we suspended dredging operations at the mouth of the Mississippi that we were able to get any dredge for this work.

Mr. DEMPSEY. Well, the act of March 2, 1919, provided for an increase in width and depth of this channel, and that document contains the latest published map.

Gen. TAYLOR. Yes; all the work that was done there was last year, during the year, and was done with the dredge we borrowed from the Savannah River project.

Mr. DEMPSEY. Well, now let us see; all the work that has been done has been done since March 2, 1919?

Gen. TAYLOR. On this project?

Mr. DEMPSEY. Yes. Well, I see it is 28 per cent completed.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is one-quarter.

Gen. TAYLOR. Well, that includes the old project as well as the new one, you see.

Mr. DEMPSEY. It says, "The existing project."

Gen. TAYLOR. The existing project; yes.

Mr. DEMPSEY. Is 28 per cent completed?

Gen. TAYLOR. Yes; but there had been a previous project and the work—

Mr. DEMPSEY. Well, that would mean on the future as well as the old project?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Now, how much did you spend last year?

Gen. TAYLOR. During the year we spent \$89,000.

Mr. DEMPSEY. Well, now, you ought to have three times that to complete it, ought you not?

Gen. TAYLOR. No, sir; we have got to have very much more than that.

Mr. DEMPSEY. Why would not that work out mathematically?

Gen. TAYLOR. Because we spent that simply on deepening from the depth which existed prior to the adoption of this project. Our new project consists of deepening the channel which had been obtained under a previous project.

Mr. DEMPSEY. That is, through deepening and widening?

Gen. TAYLOR. Yes. Now, that 28 per cent does not mean 28 per cent of the project adopted by the 1919 act, but it means 28 per cent of the work required from the beginning.

Mr. DEMPSEY. I do not think that is what that language means, at the top of page 739, "existing project." That means the new project. Now, that language may not have been chosen correctly, but if it was chosen correctly it means the new project.

Gen. TAYLOR. Well, if you will take that in connection with the language on page 738, "The existing project was authorized by the following river and harbor acts," etc.

Mr. DEMPSEY. That is right.

Gen. TAYLOR. The act of March 3, 1879, provided for the construction of East River jetty; the act of March 2, 1907, provided for channels in the inner and outer harbor of 30 feet deep at mean high water, with widths varying from 150 feet at Academy Creek to 400 feet across the outer bar; the extension of training wall in East River; and the construction of two spur dikes; and the act of March 2, 1919, provided for increased widths and depths in the existing channels.

Now, the project includes all of that.

Mr. DEMPSEY. That is all right, General, but now take even that view of it, you have a project and there is nothing done on it; you go on and do 28 per cent of it. It does not make any difference whether you call it 28 per cent of the existing project or 28 per cent of the combined project; it is 28 per cent just the same, is it not? You have only 72 per cent left, have you not?

Gen. TAYLOR. But the estimate of new work on the modification of the project adopted in 1919 was \$1,436,000, making a total estimated cost of the new work—

Mr. DEMPSEY. Where is that?

Gen. TAYLOR. On page 738—total estimated cost of \$1,932,650, so if you take 28 per cent of that—

Mr. DEMPSEY. Well, apparently you have been doing better than you estimated you would do, have you not?

Gen. TAYLOR. We have, because the original estimate of \$1,436,000 contained an item of \$500,000 for a dredge.

Mr. DEMPSEY. That is right.

Gen. TAYLOR. Now, we expect to get away from that and not spend that at all.

Mr. DEMPSEY. And get your general allowance for dredging?

Gen. TAYLOR. Yes; so that \$500,000 becomes unnecessary on that particular project; we hope to save that much.

Mr. DEMPSEY. Well, now, let us see if that does not work out. Was that \$500,000 or \$550,000?

Gen. TAYLOR. It was \$500,000, I think.

Mr. DEMPSEY. That leaves \$936,000?

Gen. TAYLOR. \$1,932,000, total estimated cost of \$1,932,000, and take \$500,000 from that.

Mr. DEMPSEY. \$1,432,000. Now, you have 28 per cent of that done?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, one-fourth of that is \$358,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, how much did you spend to get your \$358,000? How much did you actually spend last year?

Gen. TAYLOR. That means the expenditures from the time the project was originally adopted; not last year. You should take all of the expenditures on the project, which have been \$544,003.24.

Mr. DEMPSEY. How much do you say you have spent all together?

Gen. TAYLOR. \$544,003.24 has been spent for new work, and assuming, as the report states, that the project is 28 per cent completed—

Mr. DEMPSEY. That ought not to be a violent assumption?

Gen. TAYLOR. No; and the estimated cost of the new work is \$1,932,000; 28 per cent of \$1,932,000 is \$541,142. That checks within \$3,000 with the amount that has been expended for new work. The amount that has been expended for new work is \$544,003.24, and 28 per cent of the estimated cost of the project is \$541,142.

Mr. DEMPSEY. And yet I do not understand that. You say, up at the top of the page, "The existing project is 28 per cent completed." You say, under "Effect of improvement," "No work has been done on the existing project."

Now, if anybody can reconcile those two statements—

Gen. TAYLOR. That should have been, "No new work has been done under the extension of the project adopted by the act of 1919."

Mr. DEMPSEY. Well, that is the existing project?

Gen. TAYLOR. That is a part of the project; yes, sir. Those two statements are not consistent; they are not correctly stated.

The statement, "The existing project is 28 per cent completed," means 28 per cent of the entire project, including all of those various parts and modifications. The effect of the improvement, the statement, "No work has been done under the existing project," means no work has been done under the work adopted under the act of 1919.

Mr. DEMPSEY. Let us take your existing project. That is 27 feet deep and 500 feet wide on the bar. Now, let us just see where we are on these things.

At the bar, 21.5, on page 739. I just want to check up right in connection with that same table.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Twenty-one and five-tenths feet. Now, 24 feet deep and 400 feet wide at Brunswick Point. At the point, 24 feet. You see, you are pretty nearly up to date there, page 739.

Also Turtle River, 24 feet deep and 350 feet wide; you have 21.5 feet.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Then, in Academy Creek, 24 feet deep and 150 feet wide. In the upper table we have 23.5 feet.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And in East River 20.2 feet. That seems to vary a good deal, does it not?

Gen. TAYLOR. Yes; the great difference there is on the bar.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. The project calls for 27 feet and you have only 21.5 feet.

Mr. DEMPSEY. Well, you have more of a shortage at Academy Creek than anywhere else. Academy Creek is only 19 feet.

Gen. TAYLOR. That is 5 feet short.

Mr. DEMPSEY. Now, take it up there, you have pretty fair depths, have you not? Let us see your class of traffic.

Gen. TAYLOR. The traffic there at the present time, Mr. Chairman, is principally oil. Within the past few years a very large oil refinery has been established there. The expenditure in that plant has run into millions of dollars. I was at Brunswick about a year ago and that plant was just being finished at that time.

Mr. DEMPSEY. Who owns that?

Gen. TAYLOR. It is one of the big oil companies.

Mr. DEMPSEY. Well, you have boats going in there.

Gen. TAYLOR. The refining company has.

Mr. DEMPSEY. What is the tide there?

Gen. TAYLOR. The tide is small.

Mr. DEMPSEY. Page 738, in the middle of the page, 6.3 feet.

Gen. TAYLOR. Six and three-tenths feet; yes.

Mr. DEMPSEY. And that is at the bar, and 7 feet at the city.

Gen. TAYLOR. There has been a great deal of complaint from the company that built that refinery, due to the fact that they can not get their larger boats in, even on the high tide.

Mr. DEMPSEY. Well, it is a good harbor. Now, I see your latest estimate here is \$50,000 for the annual cost of maintenance.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, I suppose that would have to be left at what it would actually cost, and we might make that reduction of 20 per cent. I mean, generally; we are not going to say anything about it here—that which our friend from Norfolk testified to.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. But aside from that, that \$50,000, I suppose that is essential.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, on your \$150,000, what do you say as to that? I see that itemized here at the top of page 740.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Your items figure up more than your estimate. They figure up \$240,000, but that includes the maintenance, I see. It figures out just the same way.

Gen. TAYLOR. Including maintenance; yes, sir.

Mr. DEMPSEY. What you have is the rental and operation of one Government dredge four months.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. A small amount for dredging by contract of refractory material, and about \$100,000 for dredging by contract of soft material.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And your overhead?

Gen. TAYLOR. Yes, sir. Well, in view of the necessity for economy, and the amount of money that we have on hand, I think that item could be cut in two. That is, we will say, give \$50,000 for—

Mr. DEMPSEY. For maintenance and \$75,000 for further improvement.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. The amount on hand is \$408,000 in cash and \$58,000 in outstanding contracts, Gen. Taylor.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Nothing more under that Savannah-Georgia district, and next we come to Jacksonville, Fla., to the ocean, Jacksonville to Palatka, and Palatka to Lake Harney.

ST. JOHNS RIVER, FLA., JACKSONVILLE TO THE OCEAN.

Mr. DEMPSEY. Now, this is a river with a little over a million and a half tons commerce.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. That is a very tortuous stream, is it not?

Gen. TAYLOR. Well, it is not very bad. I mean, the turns are not very sharp. This is a very small scale map.

Mr. DEMPSEY. Which exaggerates it.

Gen. TAYLOR. Which exaggerates it. There (indicating) is a distance of 10,000 feet, 2 miles, so that reach is 2 or 3 miles long or more.

Mr. DEMPSEY. That really is a part, I take it, of the harbor of the city of Jacksonville, is it not?

Gen. TAYLOR. Yes; it is.

Mr. DEMPSEY. That is about what it is.

Gen. TAYLOR. It is.

Mr. SMALL. How large is Jacksonville?

Gen. TAYLOR. The census of 1920 shows 91,558, and in 1910, 57,700.

Mr. DEMPSEY. I see you have on hand \$103,000 in cash and \$172,000 in outstanding contracts.

Now, that project provides for a channel 30 feet deep as against an existing 24-foot channel 300 feet wide in the straight reaches and 600 feet wide in the bends and through the jetties.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Is not that a pretty good depth?

Gen. TAYLOR. Yes; it is.

The larger boats come pretty close to 30 feet, and there is a portion of that channel that has a hard bottom, which is quite different from the conditions that exist in the Savannah River, where it is nearly all soft.

Mr. DEMPSEY. Last year you spent \$308,000 for maintenance and \$121,000 for new work, I see, making a total of \$430,000, approximately.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, they say here the project is about 93 per cent completed.



Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Channel over the outer bar and to Mayport has been dredged to project dimensions. Where is Mayport?

Gen. TAYLOR. That is over here. [Indicating on map.]

Mr. DEMPSEY. You say that Mayport anchorage has been dredged to 27 feet, and the channel in the river from Mayport to Jacksonville has been fixed and protected by the training walls and shore protection and dredged to project dimensions except in the rock cut at Arlington. Where is the rock cut at Arlington?

Gen. TAYLOR. Right over here. [Indicating on map.]

Mr. DEMPSEY. At the close of the year there was a channel of practicable width and least depth of 28 feet at mean low water from the entrance to Arlington cut. Where is the entrance to Arlington cut?

Gen. TAYLOR. Here is the entrance. [Indicating on map.]

Mr. DEMPSEY. At which the controlling depths of the 27 feet was found?

Gen. TAYLOR. Here it is, up near the city.

Mr. DEMPSEY. Now, here is your estimate, \$351,000 for the operation of two dredges and miscellaneous floating plant, overhead, and \$255,000 for further improvements. They say that this very large amount estimated for maintenance as compared to previous years is on account of the high cost of material, labor, and supplies, and that no work has been done on the jetties since 1913.

Gen. TAYLOR. The jetties, Mr. Chairman, have gotten into a very bad condition, so that they do not—

Mr. DEMPSEY. Do not function.

Gen. TAYLOR. Do not confine the water as they should. Then, it speaks there of—

Mr. DEMPSEY. Where are your jetties?

Gen. TAYLOR. Right at the mouth of the river. The shoaling is very rapid in this cut here, and it is proposed to put a training wall across there so as to give a better direction to the water coming in.

Mr. DEMPSEY. That is a sea entrance?

Gen. TAYLOR. At the near end of the jetties. It is really a continuation or spur of the jetties. We have given a great deal of thought to the conditions down there with a view to ameliorating the conditions of the shoaling, and concluded that it would be a good investment to build that training wall; it would save in the shoaling a good interest on the investment and straighten the channel out and help conditions generally, and the jetties have reached such a state of deterioration it is very necessary that some work be done on them. And no work has been done for eight years on them.

Mr. DEMPSEY. What is the distance from the sea to Jacksonville via this river?

Gen. TAYLOR. Twenty miles.

Mr. DEMPSEY. Now, how much did you spend last year?

Gen. TAYLOR. \$429,870.

Mr. DEMPSEY. Now, that \$275,000 on hand leaves you \$200,000 short of last year. Taking them separately, what do you say should be done in view of conditions with the maintenance and with the further improvement? For the improvement, I take it, is largely a question of that rock out there at that point.

Gen. TAYLOR. No; the further improvement is the training wall at the inner end of the jetties.

Mr. DEMPSEY. And that rock cut.

Gen. TAYLOR. Well, it is for that training wall almost altogether.

Mr. DAVIS. Taking into account also, General, the decrease in cost of all these things, prospective. If they do not decrease in cost, we will have a terrible time here all along the line.

Gen. TAYLOR. I do not think those items should be reduced much. You will notice there is also a recommendation in there that a continuing contract for \$250,000 be given. That is, the recommendation is really for \$606,000 plus \$250,000.

Mr. DAVIS. What do you mean by continuing contract?

Gen. TAYLOR. It means Congress authorizes us to enter into a contract above the appropriation. They will give us an appropriation of, for example, \$100,000 and authorize us to enter into contracts for not to exceed one million.

Mr. DAVIS. Well, is there any way of discontinuing those continuing contracts?

Gen. TAYLOR. I do not quite understand the question.

Mr. DAVIS. Well, suppose you got tired of the contract; could you not notify them to quit?

Gen. TAYLOR. Well, we do not make a contract for more than is necessary. We would not make one contract for the whole work.

Mr. DAVIS. You might consider it was not necessary two years from now; could you not discontinue the contract?

Gen. TAYLOR. No; take on the Ohio River, for a particular case; a lock and dam is estimated to cost \$1,000,000 and four years to construct. Congress gives us a certain amount of money and authorizes us to enter into contracts in addition to the amount appropriated to the extent of \$5,000,000.

Mr. DAVIS. There is no way of stopping that continuing contract, is there?

Mr. SMALL. They submit estimates from year to year.

Mr. DAVIS. Suppose you did not submit estimates; your continuing contract would cease, would it?

Gen. TAYLOR. Those contracts all contain the provision that if Congress fails to appropriate, that after one year the contract may be annulled.

Mr. DAVIS. That is what I wanted to find out, whether it was a perpetual contract or not.

Gen. TAYLOR. No. They all contain a provision that if Congress fails to appropriate, that after one year the contract may be annulled.

Mr. DEMPSEY. Well, what do you say about this?

Gen. TAYLOR. I would say, Mr. Chairman, if you omitted the continuing contract authorization of \$250,000, that really is equivalent to a cut in the estimate of \$250,000, and I think that is all that should be made under any circumstances. This estimate contains \$606,000 in cash and a recommendation for \$250,000 for a continuing contract, amounting to \$856,000 in all, and if you omit the \$250,000 for continuing contract authorization, that really amounts to a cut in the estimate of \$250,000. The \$250,000 was put in in that way for the reason that it is expected to make a contract for the repair of the jetties. That contract will run over, perhaps, two or three years, not using all of the money this year, and it was expected next year we would come in to the Appropriations Com-

mittee—not in the river and harbor bill, but in the sundry civil bill—for the amount to carry on that contract.

ST. JOHNS RIVER, JACKSONVILLE TO PALATKA.

Mr. DEMPSEY. Where is Palatka—above Jacksonville?

Gen. TAYLOR. Palatka is above Jacksonville; yes, sir.

Mr. DEMPSEY. On that you have no funds on hand?

Gen. TAYLOR. Fifty-five miles south of Jacksonville, up the river.

Mr. DEMPSEY. That is for 13-foot depth by 200 feet in width?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, in 1913 the project was completed, except in Deep Creek, which is about 50 per cent completed. You do not know how long that Deep Creek section is?

Gen. TAYLOR. That is a little side channel that runs up here; it is not very long. It leads up to a landing.

Mr. DEMPSEY. Oh, yes; the whole main channel, then.

Gen. TAYLOR. Yes; the whole main channel. That Deep Creek section has nothing to do with the main section from Jacksonville to Palatka.

Mr. DEMPSEY. What you propose to do is, as shown on page 754, to restore the project depth and width?

Gen. TAYLOR. Yes, sir. There is a pretty good business on that section of the river, you will notice.

Mr. DEMPSEY. There has been no maintenance work done there, I see, since 1913, in those two cuts you propose to restore?

Gen. TAYLOR. No, sir; there has been no expenditure in that section in 1919 and 1920. In 1918 there were \$13,000 expended for maintenance.

Notice the tonnage in the last year increased 46 per cent.

Mr. DEMPSEY. Do you regard this as a commercial project?

Gen. TAYLOR. I do; yes, sir.

Mr. DEMPSEY. Well, what do you say as to how you would class that?

Gen. TAYLOR. I would class that as essential. That \$20,000 for maintenance.

ST. JOHNS RIVER, PALATKA TO LAKE HARNEY.

Mr. DEMPSEY. The next item is \$7,000, St. Johns River, Fla., Palatka to Lake Harney.

Gen. TAYLOR. That is continuing on up the river south a distance of 32 miles.

Mr. DEMPSEY. The existing project is for an 8-foot depth by 100 feet wide, to Sanford; 5 feet deep and 100 feet wide, Sanford to Lake Harney. The section from Sanford to Lake Harney was completed in 1912, I see, but there has been shoaling. The section between Palatka and Sanford has been completed, except the lower part, in Lake Monroe, where the depths vary from 6 to 7 feet at mean low water. At the end of the fiscal year, the depth was 6 feet, Palatka to Sanford, and 4 feet to Lake Harney, was it not—page 756, at the bottom?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You are asking for \$58,000 for further improvement and \$7,000 for maintenance. Well, what do you say as to the two amounts there?

Gen. TAYLOR. Well, the \$7,000 for maintenance I regard as essential; as they have a considerable business as it previously existed, I assume they could continue to do business without any further improvements.

Mr. DEMPSEY. This year?

Gen. TAYLOR. This year; yes, sir.

OKLAWAHA RIVER, FLA.

Mr. DEMPSEY. The next is Oklawaha River. I see the project has just started. It is only 9 per cent done; tonnage, 12,000 tons.

Now, that lock and dam proposition?

Gen. TAYLOR. There is a lock and dam involved in that project; yes, sir.

Mr. DEMPSEY. And the completion of the lock and starting of the work on the dam is estimated at \$90,000 and the dredging and snagging at \$10,000?

Gen. TAYLOR. Yes, sir. On a certain section of that stream, from the mouth up to Silver Spring Run, there has been in the past and I think there will continue to be a considerable commerce. There is a fairly good channel. Above Silver Spring Run the stream is very much smaller and the commerce is much less.

Mr. DEMPSEY. Well, suppose we just take the maintenance down to Silver Spring Run, what does that cost us—and let further improvements await developments?

Gen. TAYLOR. Well, it would probably be half of the estimated cost.

Mr. DEMPSEY. Probably \$5,000?

Gen. TAYLOR. Yes; probably \$5,000.

Mr. DEMPSEY. Well, now, we have three items here together—Indian River, Miami Harbor, and the harbor at Key West, Fla.

HARBOR AT KEY WEST, FLA.

Mr. DEMPSEY. On Indian River you have \$21,000; Miami Harbor, \$25,000; and the harbor at Key West, Fla., \$25,000; with \$88,500 for improvements. Ought that amendment to the bill stick?

Gen. TAYLOR. Yes; that is an increase in the estimate.

Mr. DEMPSEY. It is?

Gen. TAYLOR. Yes; and while we had that request in the sundry civil bill, the House Committee on Appropriations did not include it.

Mr. DEMPSEY. In other words, this \$88,500 is an increase over something that has not been granted?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Well, that might as well wait; there is no question about that.

Gen. TAYLOR. That can wait; yes, sir.

Mr. DEMPSEY. Until we find out where we are.

Mr. SMALL. Only \$25,000 recommended?

Gen. TAYLOR. Yes, sir.

## INDIAN RIVER, FLA.

Mr. DEMPSEY. Now, we come to the three items—first the Indian River, Fla., page 766. That is for a project 5 feet deep by 75 feet wide. The project is about 70 per cent completed. That is a part of the inland waterway, is it?

Gen. TAYLOR. Yes, sir; that is part of the inland waterway.

Mr. DEMPSEY. I see it has a rather small traffic?

Gen. TAYLOR. Yes. It has a rather valuable traffic, though; that is principally fruits and vegetables.

Mr. DEMPSEY. Fertilizer, fruits, oils, vegetables, and miscellaneous merchandise?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Well, General, do you regard that as an integral part of the intracoastal waterways?

Gen. TAYLOR. It will be when the intracoastal waterways are extended down that far. That is a link, but at the present time it is separate.

Mr. DEMPSEY. Well, what I mean is, has it a future as a waterway?

Gen. TAYLOR. I think it has a very good future. The last year the railroad, the Florida East Coast Railroad, has been absolutely swamped with traffic. They could not carry the business that was offered. If there had been a good, we will say, 12-foot barge canal along that coast I am satisfied it would have done a big business, and a very valuable business, too. It would have been of very material assistance in helping out the shortage of transportation facilities.

Mr. DEMPSEY. Then, what do you say about the amount of this item here?

Gen. TAYLOR. Well, it is a little difficult to say. I suppose one-half.

Mr. DAVIS. \$10,000?

Gen. TAYLOR. That would be less than the average.

Mr. SMALL. \$10,500 is the average.

## MIAMI HARBOR, FLA.

Mr. DEMPSEY. All right. Now, the next item, Miami Harbor, page 771.

Miami is a place that is growing very rapidly, is it not?

Gen. TAYLOR. Very rapidly, indeed.

Mr. DEMPSEY. Next to Jacksonville, is it not?

Gen. TAYLOR. I am not certain but what in percentage increase Miami has exceeded Jacksonville. It is a most progressive place.

Mr. DAVIS. It has superseded Palm Beach.

Mr. DEMPSEY. Let us see. You have estimated there \$25,000. Your tonnage there was 240,000, with a value of \$7,000,000, was it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You have on hand about \$110,000?

Gen. TAYLOR. Yes; of which \$100,000 is obligated by contract. That is for deepening the entrance to the harbor. That is a cooperative proposition; that is, the Government is to do a certain amount

of work in obtaining an entrance channel, and then the city is to dredge and maintain the channel across the bay.

Mr. DEMPSEY. Well, now, this is the ocean here, is it not [indicating on map]?

Gen. TAYLOR. That is the ocean. This is due north. There is just a little narrow sand spit here.

Mr. DEMPSEY. How far is that?

Gen. TAYLOR. It is about 3 miles altogether; 3 or 4 miles. It is across Miami Bay. The fact that you have not more depth in there is the reason they do not have a larger commerce now. If they had the larger depth in there that would probably be a port of call for boats plying from New York to points south.

Mr. DEMPSEY. Well, now, just let us see where we are on that harbor.

Gen. TAYLOR. Here, Mr. Chairman, is Miami. You see, it is pretty well down toward Key West.

Mr. DEMPSEY. On the east coast of the mainland, except Jacksonville.

Gen. TAYLOR. Well, St. Lucie Inlet is up in here; those two are about the same. It is the first harbor north of Key West, but those two come in at those two points on the Florida coast.

Mr. DEMPSEY. Now, your existing project is for a channel 20 feet deep by 300 feet wide?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Your project is about 65 per cent completed, I see?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You have jetty work and revetment work there, I see?

Gen. TAYLOR. Yes, sir; and dredging.

Mr. DEMPSEY. The city of Miami has provided a channel 18 feet deep from the entrance to the city of Miami across the bay?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Which has shoaled somewhat—about 2.5 feet—and is that largely rock?

Gen. TAYLOR. There is rock in the channel across the bar. That has been the difficulty in carrying on the work; the rock is in the shape of boulders.

Mr. DEMPSEY. To complete the project the jetties must be raised and extended and some shore revetments made and channel dimensions secured by the removal of shoaling.

Well, we had better leave that as it is, had we not?

Gen. TAYLOR. Yes; I think so.

#### HARBOR AT KEY WEST, FLA.

Mr. DEMPSEY. The next is the harbor at Key West, Fla.

Mr. DAVIS. That reduces that \$71,000 down to \$61,500?

Gen. TAYLOR. Well, you have not taken up the harbor at Key West yet.

Mr. DEMPSEY. Now, that harbor at Key West, you have on hand \$212,000 in outstanding contracts?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And \$27,000 in cash. That shows a large tonnage, nearly 2,000,000 tons, and of very large value?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And this \$25,000 is for maintenance?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you say as to the necessity of that?

Gen. TAYLOR. I should leave it all, without any question.

Mr. DAVIS. But you can get along without an estimate for improvement?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. General, I see by the statistics Miami increased in population from a little over 5,000 in 1910 to nearly 30,000 in 1920.

Gen. TAYLOR. Yes, sir.

Mr. DAVIS. Nonresident or local residents?

Mr. DEMPSEY. Well, I guess they are both. I guess that will be all for to-day, General.

---

FRIDAY, JANUARY 14, 1921.

JACKSONVILLE, FLA., DISTRICT.

Mr. DEMPSEY. The next is a group of items in the Jacksonville, Fla., district, in which estimates are made for three items, \$11,000 for the Kissimmee River, \$9,000 for the Caloosahatchee River, and \$5,500 for the Anclote River, in Florida, all for maintenance and \$67,000 for further improvement at Sarasota Bay.

KISSIMMEE RIVER, FLA.

Taking the Kissimmee River first, we find that there is \$7,500 on hand, as of the 1st of December, in cash, and \$1,200 in outstanding contracts. The tonnage there is 10,000 tons of the value of something over \$8,000. This is a 3-foot channel, 30 feet wide, which has been completed, but owing to shoaling the depth is about 2 feet. The work proposed is that of maintenance, dredging, and repairing bulkhead and cutoff dams. The question, Gen. Taylor, that naturally arises is whether there is any water in the river?

Gen. TAYLOR. I would like to call attention to the comparative statement of commerce on page 783. You will see from that statement, that up to and including 1915, there was a very considerable commerce. That year it amounted to 73,565 tons. The next year it dropped to about one-fifth of that, and has since remained at that low figure. That decrease in the business of the river is due to two things: First, a lowering of the level of Lake Okeechobee, which has seriously affected the navigability of the Kissimmee River. The State, in pursuance of some land reclamation and drainage operations, has built a number of drainage canals leading out from the lake. These drainage canals have been constructed for the purpose of lowering the level of the lake and preventing it from overflowing the rim.

Mr. DAVIS. What is the size of the lake?

Gen. TAYLOR. It is about 30 miles in diameter, but is a very shallow lake. It is surrounded by what is known as the Everglades which is a very rich territory. This land is covered with a long grass in its natural condition, and before the lowering of the lake during high water it overflowed the rim and the grass prevented the water from running off, so that it became swampy. But lowering of the lake has reclaimed very large quantities of land. It is settling up rapidly and it is very productive, and will undoubtedly produce large, heavy crops.

The Kissimmee River for a long time was the only means of transportation for considerable country leading from Lake Okeechobee north, but the increased use of motor trucks have made it possible for the people to carry their produce to the railroads on either side.

These two conditions, that is the lowering of the lake and the river and the increased difficulties of navigation and the greater use which has been made of motor trucks account for the falling off of the commerce on the river.

Mr. DEMPSEY. You are not going to be able, General, by appropriations, to put an end to either one of those conditions?

Gen. TAYLOR. I should explain that the permit which was given to the State of Florida for the construction of the canals required them to do certain work in the canals, to put in dams, and regulating works, including dam at the head of the Caloosahatchee River, which is this river here, right at this point [indicating]. They are to put locks and regulating works in some of these other canals, so as to maintain the level of the lake at a certain elevation above the Gulf. That will restore the navigable condition to a certain extent, and it is also expected that the State will do other work that will restore the navigable condition to approximately the original condition, making it about as it was prior to their work.

The lake, I should say, produces a very great number of fish. There are a great many fish that come out of the lake that make a very valuable commerce, and those are shipped down the river or canal by small boats. It is for that reason that navigation of Lake Okeechobee and the waters connecting it on each side is important.

We had difficulty for a long time in requiring the State to meet its obligations. It is now, however, actively and in good faith carrying out its obligations, and is constructing the locks that are required. The locks are pretty well on toward completion, so that I think the next year the lake will be restored to a height such that navigation can be carried in without drowning out these lands in the Everglades.

Mr. DEMPSEY. Do you not think that it would be a good thing to wait until those locks are completed?

Gen. TAYLOR. I do not think it is necessary to make that entire appropriation. I think some of it should be given, so that we can take out the worst of the shoals. A certain amount of work can help.

Mr. DEMPSEY. It will not help unless you have navigation.

Gen. TAYLOR. There is a little navigation now.

Mr. DEMPSEY. But it must be a very little indeed.

Gen. TAYLOR. Ten thousand tons. Of course, that is not a very heavy navigation.

Mr. DAVIS. The width of the channel is, I see, 30 feet.

Gen. TAYLOR. It is a small motor boat proposition.



Mr. DAVIS. What is the depth of the lake?

Gen. TAYLOR. Quite small. It is a very shallow lake for that superficial surface. It is a regular dish pan.

Mr. DEMPSEY. Have you any suggestions on that, Mr. Small?

Gen. TAYLOR. It is a practical navigation proposition.

Mr. DEMPSEY. It has been and it may be again, but we do not know yet whether it will be again or not. That is the difficulty.

Gen. TAYLOR. That is the difficulty, of course. The conditions, as I have said, are largely due to the lowering of the lake, the shoaling of the river, and the increased use of motor trucks.

Mr. DEMPSEY. They are going to increase, and I hope they will raise the level of the lake.

Gen. TAYLOR. They will undoubtedly. The work that the State is doing is going to raise the level of the lake and restore the river to its original condition.

Mr. DEMPSEY. Do you not think that \$8,500 is all that ought to be spent during the coming year under the doubts that exist? You know what the policy of your department has been, for instance, take a case like the Niagara River, to wait until they empty the intake of the two Tonawandas before you dredged the river. You would be sure that the locality would have some incentive to do its part.

Gen. TAYLOR. Well, it would be of advantage to have the appropriation for which the estimate is submitted.

Mr. DEMPSEY. Have you any suggestions as to that, Mr. Small?

Mr. SMALL. It is very difficult to make a suggestion. I think Gen. Taylor is right as to its local importance, and yet there is a very small commerce.

Mr. DEMPSEY. It is right if we could get them some water there, but unless they can raise the level of the lake it is not going to do any good.

Gen. TAYLOR. The fact that there is no water there is due to the officials of the State, who did not comply with the conditions of the permit. We have had no end of correspondence with the State officials. They absolutely disregard the plain conditions of the permit, and it took some very strong letters from the Secretary of War to get them to comply with the conditions of the permit, which were absolutely essential to the maintenance of navigation. The officials who conducted those operations were interested only in the reclamation of those lands surrounding the lake, and absolutely disregarded the conditions which were imposed with the intention of preserving the navigation which is essential to the people living around the lake, the fishermen using the lake and the people living on the Kissimmee.

Mr. DEMPSEY. They got absorbed in the project of getting rid of their swampy conditions and forgot the rest of it.

Gen. TAYLOR. That is about it.

Mr. DEMPSEY. Do you not think that we ought to mark this, under all the circumstances, deferred.

Gen. TAYLOR. I think it may be.

## CALOOSAHATCHEE RIVER, FLA.

Mr. DEMPSEY. Your next item is \$9,000 for the Caloosahatchee River, Fla., page 784. I see the commerce there is 29,000 tons, with a value of \$2,000,000. The amount on hand is——

Gen. TAYLOR. Nothing.

Mr. DEMPSEY. That is right. And practically nothing in contracts.

Gen. TAYLOR. Nothing at all. There was \$211 in outstanding obligations on the 1st of December. In other words by the 10th of December there was probably not a cent of funds available.

Mr. DEMPSEY. Now the existing project is a channel 200 feet by 12 feet deep at the entrance, 100 feet and 10 feet deep to Fort Myers, and 4 feet deep from Fort Myers to Fort Thompson.

Gen. TAYLOR. And from there on up to the lake, the channel will be taken care of by the operations of the State.

Mr. DEMPSEY. Let us see where that is.

Gen. TAYLOR. Here is Fort Myers and here is Labelle.

Mr. DEMPSEY. On the west coast?

Gen. TAYLOR. On the west coast. It runs down from Lake Okechobee into the Gulf of Mexico. You will notice that there is no railroad communication in this channel up in here. There is a railroad that runs to Fort Myers. That is a very large fruit growing country, particularly an orange growing country, and practically their only means of getting the crop out is down the river. Last year the navigation was interfered with by the operations of the State, and the next year that condition will be bettered very much if not entirely remedied.

Mr. DEMPSEY. They had a good commerce any way.

Gen. TAYLOR. They had a good commerce. The commerce increased over that of the year before. That was due to better conditions of navigation.

Mr. DEMPSEY. The commerce went down from 70,000 tons in 1915 to 20,000 tons in 1918, but it went up to 29,000 tons in 1919.

Gen. TAYLOR. It dropped from 1915 due to the same reasons that the commerce on the Kissimmee River dropped. It was the inability to navigate that river for several years. The State in its operations really put obstructions in the river, so that the boats could not get by at all. I should have said that the head of this river was in this little lake to the west of Lake Okechobee, Lake Hicpochee. There is a canal that has been constructed for drainage purposes which has been used by boats for a good many years, so that it has been quite a favorite trip for tourists crossing the State of Florida by boat to cross the lake and then down one of these canals to the Atlantic coast.

Mr. DEMPSEY. I see that commerce is threatened in the vicinity of the lake by the State operations there.

Gen. TAYLOR. We have had a good deal of complaint of the conditions on the river.

Mr. DEMPSEY. Well, that is a very different project from the preceding one, anyway.

Gen. TAYLOR. Yes; it is a different project. The lower part of that river is very fair navigation, from Fort Myers up for some distance.

Mr. DEMPSEY. Seagoing vessels come in?

Gen. TAYLOR. And go up as far as Fort Myers.

Mr. DEMPSEY. I suppose you would put that in the essential class?

Gen. TAYLOR. Yes, sir.

#### SARASOTA BAY.

Mr. DEMPSEY. The next item is Sarasota Bay, \$67,000, \$3,900 in cash and \$31,000 in outstanding contracts, making \$34,000. The tonnage is very small—4,322 tons.

Gen. TAYLOR. There is a very indifferent channel there now.

Mr. DEMPSEY. Where is Sarasota Bay?

Gen. TAYLOR. This is Sarasota Bay [indicating]. This is Tampa, and this is Tampa Bay and Sarasota Bay is immediately south. It forms an inside passage from Tampa Bay south for a considerable distance down as far as Venice, a distance of some 20 miles down the coast. The work is that of dredging a channel across Sarasota Bay from Sarasota, making a channel from Sarasota to Tampa Bay.

Mr. DEMPSEY. I see the project is for 100 feet by 7 feet deep for a certain distance, 675 feet wide and 3 feet deep. The length of the project is 38 miles. The total estimate for the new work is \$172,000, and the annual cost of maintenance is \$6,000. What do you mean by saying that the dredge *Sarasota* is partially owned by this improvement.

Gen. TAYLOR. I mean that the construction of that dredge was paid for by funds appropriated for this improvement and some other improvements.

Mr. DEMPSEY. You say the project is about 49 per cent completed?

Gen. TAYLOR. That was at the end of June. The contract which was then in force, and which is well along toward completion now, will carry the project probably to 70 per cent completion.

Mr. DEMPSEY. I see that the entrance of a railroad into this territory lessens the importance of the water route.

Gen. TAYLOR. There is a branch road leading down to Sarasota.

Mr. DEMPSEY. Is that an explanation of the small amount of traffic?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. I see there has never been much traffic.

Gen. TAYLOR. There never has been in the last few years. The channel has been very bad, but they have attempted to run boats from Sarasota to Tampa. There is quite a business between Tampa and Bradentown, which is on the Manatee River, the entrance to which is just north of Sarasta Bay, and there have been various attempts to run boats down to Sarasota Bay, but on account of the insufficiency of the channel, it never has been a success. They did not run a boat which was large enough really to take on commercial business. The channel has been partially completed, but it is of very little benefit and will be of very little benefit unless the channel is completed all the way through. The conditions are such that there will be very little advantage in having part of the money. • Either the entire estimate should be given or the whole omitted. The conditions are such that it can not be put in the essential class.

## ANCLOTE RIVER.

Mr. DEMPSEY. The next is Anclote River, Fla., estimate \$5,500, tonnage 13,000 tons, no outstanding contracts, and I suppose there is no money on hand, as there was only \$500 on the 1st of December. That is a channel 100 feet wide, 6 feet deep to the inside of the river, and 4 feet deep to the county bridge. The length of the section is about 4 miles. The project is completed.

Mr. SMALL. You will notice that this has a better commerce, more than 13,000 tons, of a valuation of more than a million dollars.

Gen. TAYLOR. It is a harbor used by fishermen, who catch fish and sponges. It is a small channel leading in from the Gulf of Mexico.

Mr. SMALL. That section is quite an important project. It seems to be only a question of whether this is essential at this time.

Gen. TAYLOR. It is really a small harbor. That is what it is, a harbor for small boats, so that these fishing boats can get in.

Mr. DEMPSEY. It is above Tampa?

Gen. TAYLOR. Thirty miles above Tampa.

Mr. DEMPSEY. Well, what is your judgment, as to whether that is essential?

Gen. TAYLOR. I should call it essential.

Mr. SMALL. Mr. Chairman, one of our colleagues, Mr. McDuffie, would like to present Mobile to the committee very briefly.

**STATEMENT OF HON. JOHN McDUFFIE, A REPRESENTATIVE  
IN CONGRESS FROM ALABAMA.**

Mr. McDUFFIE. Mr. Chairman, probably I am a little bit ahead of time; I thought you had reached Mobile. I will be very glad to wait and come back if you would prefer.

Mr. DEMPSEY. We either ought to take up the Mobile item and dispose of that now or else have Mr. McDuffie come in when we reach it.

Mr. SMALL. It might be difficult to locate him. We had better do it now, and take this other up later.

**MOBILE HARBOR AND BLACK WARRIOR RIVER, ALA.**

(See p. 212.)

Mr. DEMPSEY. Mobile, Ala., page 23. If you will let us first just run over this in a general way, then we will hear you in regard to it. Mobile, Ala., carries an estimate of \$216,000 for maintenance and \$207,000 for further improvements. It has \$90,000 in cash on hand and \$29,000 in outstanding contracts; about 2,000,000 tons of freight, of large value.

Now, on page 882 the project is for 33 feet, 450 feet wide across the bar, 300 feet wide, and 30 feet deep from deep water in the bay to Chickasaw Creek, about 5 miles above the mouth of the river, a distance of 33½ miles, and for the removal of sunken obstructions. The project is 18½ per cent completed. Under the old project they have 30 feet deep and 300 feet wide at the bar, and in the bay 27 feet in depth with a width of 200 to 300 feet. The controlling depths at the bar, in the bay, and in the river are respectively 28, and 25 feet.

Now, the estimate is based on the operation of a dredge for 12 months and another dredge for 6 months, in the bay and river channels, for maintenance and new work and upkeep of plant \$360,000, operation of a dredge for six months \$54,000, operation of a snag boat in the river channel six months \$9,000. It is said that the increased appropriation is asked because of increase in costs. Now, Gen. Taylor, is there any way in which these dredges to be employed here are connected with the dredges that it is suggested that Congress build?

Gen. TAYLOR. There is one dredge that is employed on this improvement that is affected by that recommendation. The dredge *Charleston* is employed on the outer bar, and the estimate here is for the one seagoing dredge on the Mobile outer bar for about six months. That \$54,000 estimate would not really be sufficient, because it is necessary to keep the old dredge on that work until the new dredge is available. With the new dredge available it would do as much in two months as this dredge will do in six.

Mr. DEMPSEY. Now, supposing that those new dredges are included, how much would that affect your estimate?

Gen. TAYLOR. It will not affect this estimate at all this year. It would affect it next year. It would cause a reduction as soon as those dredges are available.

Mr. DEMPSEY. How long will it take to build those dredges?

Gen. TAYLOR. About a year.

Mr. McDUFFIE. Mr. Chairman, I simply want to make a brief statement to you gentlemen. Of course, the General knows all about conditions obtaining at the port of Mobile, and I am satisfied that Mr. Small does, and maybe each of you do. Mobile is a rapidly growing port with wonderful possibilities. It is one of the big ports of the Nation. It is at the foot of the longest canalized river in the world, which is bringing steel and iron to Mobile where the United States Steel Corporation is building ships at Chickasaw plant. I am informed by this correspondence from the rivers and harbors committee of the Chamber of Commerce of Mobile that they are building 8,000 and 10,000 ton ships, which can not be loaded to their capacity by virtue of the depth of the channel.

Mr. DEMPSEY. What is the depth?

Mr. McDUFFIE. The controlling depth is less than 27 feet now; in fact, 26 feet. Of course, the channel is no deeper than its shallowest part.

Mr. DEMPSEY. What is the draft of the vessels?

Mr. McDUFFIE. About 28 feet. They get out by scraping the bottom, stirring up the mud considerably, and not loaded to their capacity.

Mr. DEMPSEY. You will notice on page 884, under paragraph "At the end of the fiscal year," that the depths in May, 1920, were 28 feet on the bar, 26½ feet in the Mobile channel, and 25 feet in the Mobile River, as compared with the project depth of 33 feet over the bar, and 30 feet in Mobile Bay and Mobile River, where there are only 28½ and 25 feet, respectively.

Mr. McDUFFIE. I desire especially to call the committee's attention to the activities of the Government in the way of building a coal terminal at Mobile. A site has been provided by the city at a cost of \$40,000 or \$50,000; I do not remember the exact figures, and that

has been given to the Government, the title has been accepted. I see from a recent paper that one of the snag boats is to begin at once to remove the snags to make the river at the terminal ready for the dredge *Wahalak*, to dredge a mooring place so that ocean-going vessels can come there to get their coal. The Government is going to spend, in fact Congress has already provided, \$400,000 for a coal terminal at Mobile on the theory, experts believe, that it can be made one of the greatest and cheapest coal ports of the whole country. The Warrior River taps now some very fine coal beds in the Birmingham district, and there is quite a bit of tonnage, in addition to the steel and iron coming down the Warrior River. That service has not been developed to its capacity by reason of the fact that we have not been able to get the equipment. We have been operating with antiquated equipment, old towboats.

#### GOVERNMENT TERMINALS.

Gen. TAYLOR. Mr. McDuffie, it might interest the committee to know how the Government is spending that \$400,000 which was appropriated by Congress for terminals for use in connection with the barge lines of the United States under the inland waterways branch. That service operates what is known as the Mississippi River-Warrior section, operating the barges on the Mississippi River and also on the Warrior. The barges on the Warrior are coal barges, which bring coal down the Warrior, partly for Mobile and taken partly through the intercoastal waterways to New Orleans. The terminal they are now preparing to build is being designed in our office. We are cooperating with that service, and we are designing the terminal, and will also construct it for them. They will turn the money over to our district engineer at Mobile, and we will do part of the construction work, dredging into the location of the terminal through the main channel with our dredges which we ordinarily use on the Mobile Channel, but which otherwise would be held up for lack of money to continue their use on the channel.

#### OPERATION OF GOVERNMENT BOATS.

Mr. DEMPSEY. General, do you know anything about how many barges, Government barges, there are on the Black Warrior?

Gen. TAYLOR. I do not.

Mr. DEMPSEY. Do you know anything about what tonnage they carry in your boats, or whether they carry it at a loss or profit?

Gen. TAYLOR. At a slight loss, but they have been improving the operation to such an extent that I think they are now approaching a paying basis. The total operation for the year was at a loss, but they have been increasing the tonnage and decreasing their overhead expenses.

Mr. DEMPSEY. My recollection is that last year there were some 80 barges on the Erie Canal that were operating at a loss of about \$127,000. Over there, there is a very bitter complaint from everybody interested in navigation, that the Government operation is absolutely inefficient, wasteful, careless, and heedless, without proper care of the canal, paying no attention to the shipper, tying up whenever they want to. They go on with their complaints by the day.

A resolution has been introduced for the end of Government operation, and the primary object is, even if they do not obtain the boats, regardless of their obtaining the boats, they want to get rid of the Government operations.

Gen. TAYLOR. I know that that is the fact; that there is a great deal of dissatisfaction with the operation of the New York State Barge Canal, but as far as I know there is not only no complaint, but very great satisfaction with the operations on the Black Warrior River. The conditions are absolutely different in the two places.

Mr. SMALL. That statement might include also the Mississippi from St. Louis to New Orleans.

Gen. TAYLOR. There has been some complaint there, but the Black Warrior has been one section where, so far as I know, there has been no complaint. There has been complaint about the Mississippi, but nothing like the complaint on the barge canal.

Mr. DEMPSEY. But you have not had much of anything on the Mississippi, and you can not complain about what does not exist. You have not had any barges so far on the Mississippi.

Gen. TAYLOR. That has been the difficulty on the Mississippi, the lack of equipment. That has also handicapped the service on the Warrior. We have loaned them our engineer barges and towboats. In fact they are operating with Engineer Department plant to a considerable extent. They are building plant, however, to replace that. Our plant was not designed for that kind of service, and is not as efficient as it ought to be for that long tow. So they are operating under a considerable handicap.

Mr. DEMPSEY. Mr. McDuffie, if you do not know exactly the facts, I think it will be extremely interesting if you will find out how many barges you have and of what capacity—what tonnage they carried—and with what result as to loss or profit last year and this year.

Gen. TAYLOR. I can give you the tonnage on the Warrior. It would of course include that and other private boats, the tonnage last year.

Mr. DEMPSEY. Let us have it, General, and you will get the rest, Mr. McDuffie?

Mr. McDUFFIE. I will be glad to get that from report of Gen. Connor. I had it in my office, but sent to Mobile just a few days ago some of the figures you ask for.

Gen. TAYLOR. The tonnage for the last four years, 1916, was 457,000 tons; 1917, 580,000 tons—

Mr. DEMPSEY. Where do you find that?

Gen. TAYLOR. On page 895. In 1918 it was 671,000 tons, and 1919, 601,000 tons. There was a little falling off in 1919 from 1918, but I think 1920 will show a material increase over 1919.

Mr. DEMPSEY. Do you know, Mr. McDuffie, whether your barges down there may be regarded as a proper type for the service in which they are engaged?

Mr. McDUFFIE. You mean the new towing boats? We have one in operation, and we will soon have two more. I suppose you refer to the self-propelled barges, or do you mean the barges which are towed?

Mr. DEMPSEY. I mean the barges the Government has placed there.

Mr. McDUFFIE. We have a self-propelled barge operating and two more en route to us now. Our great difficulty has been, as the gen-

eral has said, the lack of equipment. The tonnage is there in inexhaustible supply, coal and iron on the river, but we have not had the equipment to handle it. Now, my idea is as to the equipment, while only one of the self-propelled boats has been operating a month, I believe they will be satisfactory. The trouble is we have not enough of them or other equipment. So it is difficult to say or pass upon that type of boat for the present, because it has not been in operation long enough.

Gen. TAYLOR. Only a short time.

Mr. McDUFFIE. We have been using in this service the Government towboats in towing from the coal district down to Mobile. That is, we have operated just as the general has told you, satisfactorily in a way, but we have not had enough equipment. I do not think we should pass judgment on the success or failure of the Warrior River transportation at present by or from the results we have obtained up to date. I think when the new equipment gets there it will be a paying proposition for the Government and ultimately private interests will seek to go into the business.

Mr. SMALL. Considering the poor equipment during 1919, the commerce there is rather satisfactory, 600,000 tons with a valuation of over \$8,000,000. It ought to show a great deal better and larger tonnage when this new equipment gets into operation.

Gen. TAYLOR. You will notice the statement here at the top of page 896 where shipments of structural and railroad steel from the Birmingham district were inaugurated during December, 1919, and during this month 1,150 tons were delivered and enroute. The Birmingham interests have taken a very great interest in this river with the expectation of shipping things to Mobile and also by way of Mobile overseas.

Mr. DEMPSEY. Well, now, what do you understand Mr. Small, to be the authority for the government building and operating, now that the war has ended, these boats?

Mr. SMALL. These operations on the Lower Mississippi and the Warrior were instituted during the war.

Mr. DEMPSEY. I understand that.

Mr. SMALL. The commerce on the Lower Mississippi had dwindled to insignificance. In this Warrior system the Government spent a good deal of money and we had a fine waterway for carrying commerce, and it connects, as the General has said, with the coal fields, and almost directly with the steel and iron products of the Birmingham district. It was undertaken, wisely or unwisely—I think wisely.

Now, as it has been undertaken, I think we ought to continue the improvement and, if possible, make it a success; and having made it a success, both as to volume of traffic carried and also the net profit of operation, then turn the equipment over to private parties. Let us hope when that is done that the commerce both on the Warrior system and the Mississippi will be continued permanently. I do not think this is the proper time to abandon it. Of course that does not come before this subcommittee—the matter of appropriation for this operation. That appropriation was continued in the sundry civil bill. We are called upon to appropriate for the Warrior River only a small sum estimated for the purpose of maintaining the channel. I do believe that these operations on the Warrior and the Lower



Mississippi ought to be continued until it can be demonstrated that a water traffic can be built up upon both lines—the Warrior and the Lower Mississippi. It has always been unthinkable to me that the country should abandon the idea of establishing commerce on the Mississippi River.

Gen. TAYLOR. The legal authority is under section 500 of the transportation act of 1920, which distinctly authorizes the operation of these barges.

Mr. McDUFFIE. And declares the policy of Congress too, under the same act, with reference to inland waterways.

Gen. TAYLOR. I think it is the same section, 500.

Mr. SMALL. The original bill taking over the railroads authorized its operation, and then when the railroads were returned to their owners under the transportation act of 1920, in section, 500 that operation was ordered to be continued and placed under the control of the War Department, first under Gen. Hines and now under Gen. Connor.

Gen. TAYLOR. It was the expectation of Congress when it was placed under the Secretary of War that it would be placed under the Chief of Engineers and operated by the Engineer Department, but the Secretary of War placed it under another branch of the department, the transportation department, which has had to do with the overseas transportation.

Mr. SMALL. I would like to say about the New York Barge Canal operations—I know something about it, and I know their attitude, probably the prevailing attitude up in New York regarding the operation there. Under the Transportation Act of 1920, as I interpret it, the War Department has the right to withdraw operations there at any time, and the matter of their withdrawal has been discussed, but, of course, withdrawal also means withdrawal of the boats and putting them upon other waterways. But when it came to the question of the withdrawal of the boats, the people of New York who are active in the matter at once protested and said that the boats should be retained there and sold to private parties, while at this stage I am not sure whether the War Department has the right to sell any of the boats or not. At any rate if the people interested in the New York Barge Canal do not wish operations to be continued, the War Department has the authority to withdraw them, and there is an insistent demand for the use of these boats on other waters, so there is no trouble about withdrawing the operations. The only difficulty lies in the fact that those who have been agitating for discontinuance of operations insist that the boats shall be retained.

Mr. DEMPSEY. Now, let me tell you—I know the absolute details. The problem, Mr. McDuffie, on the Erie Canal is a different problem from that on the Mississippi and the Black Warrior in this respect, that the Erie Canal had previous to the deepening to 12 feet a very large traffic, and it lost that traffic simply owing to the fact that it took several years to get the project depth, and during the progress of the improvement it was impossible to use it. People of the State have boundless confidence in the future of the Erie Canal, now that the 12-foot depth has been attained. The question of discontinuance came up too late last year for the State to equip that harbor with any barges of private construction, and I naturally was very

active in the matter, and, rather contrary to the judgment of public men of the State, took the position that we should not insist upon withdrawal of those barges if it meant taking them away from the Erie Canal during that year, and I took that position not as a matter of permanent policy, but simply as a matter of policy for the year only. When it comes to the question of whether the barges should be withdrawn, there is no division of sentiment in the State. We are of one accord that Government operations should cease, and that if it involves of necessity the taking of those barges from the Erie Canal, and putting them elsewhere, we will submit to that condition.

There is not any diversity of opinion about it at all, but it was only a temporary policy to keep them there, because it was too late in the season to provide other equipment. We think that they should be leased for private operation, but we are not going to make that a condition unless Congress is quite willing to do it. If we have to choose, there will be no hesitancy. We will let them go wherever the Government wants to take them.

Now, as to the Black Warrior and the Mississippi, as I understand it, there you have your problem of an experiment in finding out whether you can make that traffic profitable or not commercially, and you gentlemen from those two vicinities want the Government to operate the boats for a time, and I do not think anybody else is disposed to interfere with you. I think we all want to see those two waterways used.

Mr. SMALL. And their successful use demonstrated.

Mr. DEMPSEY. And if you gentlemen down there think that is the way to do it, while we are opposed, generally speaking, without any dissent at all to Government operation, we should regard this as one of the rare exceptions where experiment should be made.

Mr. SMALL. And with a mental reservation to stop the Government operation as soon as its success has been demonstrated and turn the equipment over to private ownership.

Mr. McDUFFIE. Now, Mr. Chairman, I want to get back to the channel at Mobile. We diverted to the Warrior River proposition in order to show the committee the necessity of speeding the original project of a 30-foot channel adopted several years ago.

Mr. DEMPSEY. Just let me call your attention in that connection to the fact that the gentlemen on the floor will want to know the concrete facts, and what we want to know is this, How many vessels have been built during the past year or two and how many it is contemplated building, the depth of which will exceed the depth you have there now? If you will turn to page 3691 of the report, you will see that the docks apparently have been adequate to accommodate the vessels that have used them in the past.

I am not saying that this project should not be completed. I recognize the importance of this harbor, but I want such supporting facts as you have that show that they require the additional depth in a practical way. That tabulation shows that in 1919 the total number of vessels drawing 24 and 25 feet was 3 that went up the stream and 26 that went down; 25 to 26 feet, 16 that went up and 6 that went down; 26 to 27 feet, 2 that went up and 3 that went down; and over 27 feet, 1 vessel that went up and none that went down.

Gen. TAYLOR. There may be one very good reason for that, that there was not depth enough for the larger vessels.

Mr. DEMPSEY. That may be.

Gen. TAYLOR. That is the fact.

Mr. McDUFFIE. They could not load them any deeper than that. I can not give you the exact number of vessels to be built in Mobile. I can very easily and very quickly get the information as to how many have been built and their deadweight capacity.

Mr. DEMPSEY. I think that will be helpful.

Mr. McDUFFIE. I will be glad to furnish that at the earliest possible moment.

We were interested, of course, in the completion of this project as early as possible, because we believe it is economy in the long run. If we are not getting enough money to work on the original project and not enough to approximately maintain even a 27-foot channel, it strikes me that there is a real waste rather than economy in our failure to provide adequate appropriation to carry out the original project.

Here is a letter, if you will permit me, I will read, which sets out the situation, a letter that has come to me from the rivers and harbors committee of the chamber of commerce.

Mr. DEMPSEY. If you will tell us the contents of that letter, in this way we will get it a great deal better, and then you can file the letter.

Mr. McDUFFIE. I will file the letter with the committee.

(The letter referred to follows:)

MOBILE, ALA., January 11, 1921.

HON. JOHN McDUFFIE,  
Member of Congress, Washington, D. C.

DEAR MR. McDUFFIE: I send you, herewith, copy of resolutions passed by our committee relative to our channel. Instead of getting ahead with the 30-foot project, we are not maintaining the old project (27 feet). And Mobile, a fresh-water harbor, is 6 inches worse off than a port with salt water, because a ship that draws 27 feet in salt water will draw 27 feet 6 inches in fresh water, with the exact same cargo.

There are three dredges in this district, the *Wahalak*, at Mobile; *Gulfport*, at Gulfport, Miss.; and *Pascagoula*, at Pascagoula, Miss. The *Pascagoula* and *Gulfport* can keep both Pascagoula and Gulfport channels dredged and still release the *Gulfport* for possibly six months for work upon our new channel project at Mobile. As it is, Mobile is not getting sufficient funds to keep the *Wahalak* at work 10 months (two months being needed for repairs); therefore, this dredge is barely keeping up with maintenance.

The *Pascagoula* has been shut down for one year; the *Gulfport* and *Wahalak* are both down now for lack of funds; and there is not sufficient money in hand to make necessary repairs to *Wahalak* and *Gulfport* and, thereby, have them ready for work whenever new appropriations are received.

The *Wahalak* is to be used for dredging in front of the coal terminal at Mobile, losing three months' time badly needed for work upon Mobile's channel. If, however, the *Gulfport* (now idle) could be brought to Mobile and used upon Mobile's channel while the *Wahalak* was dredging at the coal terminal, this would help some. But this would require some funds, possibly \$75,000, out of the "lump-sum" appropriation.

Under these circumstances, we ask if the full appropriation can not be obtained for our 30-foot project. This would lessen maintenance cost in the end for the wider channel (300 feet) can be more economically maintained at 30 feet than one of 200 feet or 220 feet (the present effort). The existing channel conditions are a great drawback to our commerce, seriously interfering with the successful operations of the larger ships using this port.

Sincerely, yours,

HORACE TURNER, Chairman.

Mr. McDUFFIE. You know we had one lump-sum appropriation last year, but the money has been exhausted.

Mr. DEMPSEY. How much did you allot to Mobile from the lump sum, General?

Mr. SMALL. \$200,000.

Mr. McDUFFIE. I understand that the fund is practically exhausted for the whole country. There is now only a small amount held for emergencies.

Gen. TAYLOR. There is just a little for emergencies, that is all.

Mr. McDUFFIE. I have here some resolutions asking for an appropriation for the completion of the project [reading]:

Whereas the controlling depth in the Mobile Bay Channel is to-day only 26 feet for a width of approximately 220 feet;

Whereas the dredge *Wahalak*, used in Mobile Bay Channel, merely keeps up the necessary maintenance in such channel as the dredge is now operated thereby accomplishing little toward the completion of existing project (widening to 300 feet and dredging to 30 feet at mean low tide);

Whereas ships built in Mobile at the Chickasaw shipbuilding plant of the United States Steel Corporation having a dead-weight capacity of 28 feet (fresh water) and other ships loading at Mobile are unable to load to their dead-weight capacity under present conditions of the channel;

Whereas under existing conditions, of merely maintaining 26 feet with the appropriations allowed, it will require many years to complete the existing 30-foot project:

*Resolved*, That the Mobile Chamber of Commerce and Mobile Cotton Exchange, through their joint rivers and harbor committee, respectfully petition Congress and the Chief of Engineers of the War Department to allow the port of Mobile the entire appropriation necessary to complete the existing 30-foot project in the most economical manner and at the earliest date possible, by the continuous operation of the dredge *Wahalak* (now stopped for want of funds), by additional employment of other dredges in this district, or by contracting a part of the dredging to private contractors.

I was in hopes that the committee would see fit—I have not talked to the General about that, and I do not know what his ideas are—but I would like to hear him along that line—about the possibility of using an appropriation to cover the estimated cost of the completion of this project at the earliest possible date. As I understand it, the estimate here of the War Department for this bill is practically a maintenance proposition. Is it not, General?

Gen. TAYLOR. It is about half maintenance and half further improvements.

Mr. McDUFFIE. That is, we are proceeding in the same way that we have since adoption of the project and we have not gotten very far, if the facts be true as set out in this letter, and I am sure they are.

Gen. TAYLOR. That is correct, but the expenditures for several years past have averaged less than \$200,000 for maintenance, and that one item in the estimate is \$216,000 for maintenance, and another of \$207,000 for further improvement. Now if we get only \$216,000 we will just about maintain the conditions as they exist to-day. Whatever we get above that will be a question of further improvements, and the \$207,000 that we recommend is the amount that can be advantageously and economically expended on further improvements, and will give us a distinct gain on the project.

Mr. DAVIS. With the present equipment?

Gen. TAYLOR. With the present equipment, yes, sir.

Mr. DAVIS. That is about as much money as you think you can spend?

Gen. TAYLOR. That is about as much money as we can economically spend. If we had more money, we could undoubtedly let some work by contract. It would cost more than it would to do it with our own plant. We have an efficient plant in Mobile Harbor and have done work at a much less rate than we have done it by contract, but we can advantageously expend the \$423,000 for which estimates are submitted.

Mr. McDUFFIE. Now, General, can you tell us about how much the depth has increased since the original project of 30 feet was adopted?

Gen. TAYLOR. It has increased very little. The controlling depths in May, 1920, were 28 feet on the outer bar, 26½ feet in the bay, and 25 feet in the river. We had very nearly those depths before the present project was adopted.

Mr. McDUFFIE. That is what I thought—showing only a maintenance and not even that according to my information.

Mr. DEMPSEY. When was the project adopted?

Mr. McDUFFIE. Three years ago, was it not, in 1917?

Gen. TAYLOR. In 1917.

Mr. DEMPSEY. We have not, Mr. McDuffie, in the bill enacted since the war, made any attempt to make any new improvements. All we have attempted to do is to maintain what we have.

Mr. McDUFFIE. I appreciate that, or probably in some instances to carry on work on projects already adopted.

Mr. DEMPSEY. No, we have not made appropriations for that.

Gen. TAYLOR. Appropriations have not been sufficient to make much progress, just about enough to keep even, that is all.

Mr. DEMPSEY. We have tried to keep just about where we were with all these projects during the war, not to spend anything more. Now we are still confronted, Mr. McDuffie, with the situation that we are very heavily taxed, and that we have to be very economical now. The committee, all of them, are alive to the importance of this port, and to the importance of completing it as soon as possible, taking into account the financial condition. We are going to treat you just as liberally as we treat any of the Gulf ports anywhere. But I am afraid that we will find that we will have to cut the estimates all through the country, on all the large ports.

Mr. McDUFFIE. You do not contemplate cutting the estimates for the maintenance, and this small amount for the continuation of the of the project—the General's estimate? I was so much in hopes that you might add more to it, in order to hurry the project.

Mr. DEMPSEY. Well, now, just to show you the situation, this bill as made up contemplates an expenditure of \$57,000,000, and we appropriated only \$12,000,000 last year. While we are in hopes that the appropriations committee as a whole will recognize the fact that the war is now over, and while we are laboring under a burden of taxation, that such work as those at Mobile are very important to commerce, and that we will have considerable more in this year's bill than we had last year, I do not think any of us believe that we can have a bill such as the estimates contemplate.

Mr. McDUFFIE. I appreciate the position you gentlemen are in, and I think we all ought to cooperate to economize as much as possible, but Mr. Chairman, do you not really believe that it would

be economy in the long run to hurry the completion of a project like this, not only in Mobile, but everywhere?

Mr. DEMPSEY. I think that water transportation is one not only of the vital things, but one of the most vital things in the country and Mobile is one of the very important harbors in the country.

Mr. McDUFFIE. Yes; Mobile is so situated that she is the natural outlet for a great deal of commerce out of the Mississippi Valley. She connects with the St. Louis and western territory, and it strikes me that it would be beneficial and helpful to commerce as a whole, and therefore economical to the Nation as a whole, to complete this project along with others of similar character at the earliest possible moment. I believe such a course would be more economical than to continue to drag along year after year without even maintaining the channel. I appreciate your position thoroughly, but I was much in hopes that the committee would feel that it would be economical in the long run to finish our harbor work at the earliest possible moment.

Mr. DEMPSEY. We are going to do the best we can.

Mr. McDUFFIE. I am sure of that, Mr. Chairman.

Mr. DEMPSEY. And we have got to work within the limitation which we find prescribed by the larger committee. We are going through the bill carefully and going to present our estimates to them, our own estimates as based on the engineer's estimates, and do the best we can. We have been very much interested in what you have had to say about it.

Mr. McDUFFIE. Thank you, sir. I will give you the information as to the tonnage on the Warrior and the number of boats built. I know Mobile has been and is now one of the greatest shipbuilding centers. Well, it is the biggest shipbuilding port south of Newport News probably. I mention that to show you the possibilities there, the advantages that would come to the country as a whole, not for local benefit purely. It means the development of the commerce and the natural flowing of the commerce through the Gulf ports from the territory that necessarily would ship through those ports. We are in proximity to the canal, a little nearer than any other Gulf port of any size. That means something, and I mention those things to show you the necessity for the completion of this project, and I sincerely hope that the committee will not see fit to cut the general's estimate, to say the least. I did not even think they would contemplate doing that. I was hopeful that you might do more in appropriating for continuance of the work on the project.

I am grateful to you for hearing me and will be glad to furnish you the information asked for.

(The statement referred to is as follows:)

Referring to your question as to the tonnage on the Warrior River, I find from the statement of Gen. Connor, Chief of Inland and Coastwise Waterways Service, that the tonnage handled by the Government equipment from January, 1920, until September, 1920, to be 160,657 tons.

This tonnage does not constitute all of the tonnage on this river. There are packet boats plying the river between Demopolis and Mobile weekly. In addition to this a vast amount of timber and lumber is handled on this waterway. It may be of interest to know that the United States Steel Corporation, which has a great shipbuilding plant at Chickasaw, just a few miles from Mobile, has purchased large manganese mines in Brazil and a great deal of this ore is expected to be handled through the port of Mobile to the Birmingham district. In the past 30 days two cargoes of this ore have arrived

at the port of Mobile for shipment by water to Birmingham, the last boat having brought in 7,800 tons. This upstream business means a great deal toward the success of the Warrior River transportation, and I believe that it is but a question of a short while when more tonnage will go upstream. In the past a great bulk of the tonnage has been a one-way haul from the coal fields and the steel and iron district. It may be of further interest to you to know that Alabama is the only State in the Union which has a plant for the manufacture of ferro-manganese steel by electricity. One of the plants of the United States Steel Corporation. The power is furnished from a plant on the Coosa River, in Alabama.

Demopolis, which is located at the junction of the Little Tombigbee and the Warrior River, is a thriving little city of 5,000 people and has more than a dozen sawmills in operation, a part of the output of which is transported to market by water. One of the largest cement plants of the South is situated on the bank of the Warrior River at Demopolis. This plant uses the waterway largely for transportation. It may be of interest to know in this connection that the supply of cement in this immediate territory is inexhaustible, and that much of it is brought down the river to Mobile for export. I have not at hand the amount of tonnage outside of the Government operation, but from what I have said I am sure you can get an idea of the importance of this waterway.

You also inquired as to the Government-owned equipment. I have here a statement of Gen. Connor showing the number of boats and packets, types, cost, depreciation, and present value. This statement should be corrected to the extent that two of the self-propelled barges are now enroute to the Warrior River from the place where they were constructed.

*Warrior River section.*

No.	Type.	Cost.	Depreciation.	Present value.
<b>GOVERNMENT-OWNED EQUIPMENT.</b>				
43	Open wood coal barges.....	\$190,246.03	\$33,003.21	\$157,242.82
3	Towboats.....	38,058.00	12,618.85	25,439.15
5	Self-propelled barges (gas producer type).....	188,701.45	35,915.19	152,786.26
1	Collier.....	60,013.05	11,648.17	48,364.88
2	Unloaders.....	22,336.00	3,882.72	18,453.28
1	Self-propelled barge (tunnel stern screw).....	244,400.00		244,400.00
1	Towboat (Cordova) <sup>1</sup> .....	137,000.00		137,000.00
	Total value, equipment in service.....	880,754.53	97,068.14	783,686.39
<b>NOT YET DELIVERED.</b>				
2	Towboats.....	274,000.00		274,000.00
3	Self-propelled barges.....	733,200.00		733,200.00
	Total.....	1,007,200.00		1,007,200.00
	Grand total.....	1,887,954.53	97,068.14	1,790,886.39

<sup>1</sup> Delivered, but not yet in service.

**EQUIPMENT TRANSFERRED FROM QUARTERMASTER CORPS, UNITED STATES ARMY, TO INLAND WATERWAYS.**

5 derrick scows.....	\$51,480.00
10 car floats.....	625,000.00
19 dock scows.....	117,642.00
	794,122.00

Another inquiry was how many ships had been constructed at Mobile which could not be loaded to their full capacity by reason of the depth of our channel. I have been unable to get the exact number, but in the event I do I will be glad to call your attention to it later. I wish to say, however, that nearly all of the boats constructed with a capacity of from 8,000 to 10,000 tons have been unable to load to their full capacity at the port of Mobile and get out of the channel to the Gulf of Mexico. They have taken on part of their cargo at the port of Mobile and finished it after getting into deeper water. This is true, especially as to the boats which have been and will be constructed by the United States Steel Corporation at Mobile. Without definite knowledge I would say that they have launched about 8 to 10 steel steamers of from 8,000 to 10,000 tons dead-weight capacity. This company is at Chickasaw, a few miles from Mobile, and are continuing to construct these steel steamers.

This fact alone will doubtless impress you of the necessity for proper appropriation at Mobile for the improvement of our harbor. A better harbor at Mobile means more commerce for the Nation. Five trunk-line railroads run into Mobile, connecting it with all of the territory between the Allegheny and Rocky Mountains. Mobile is nearer to the Panama Canal and the west coast of South America than any other great port of the Nation. It is the natural gateway to the South out of the great Mississippi Valley. Many steamers of the larger type can not call at the port of Mobile for tonnage which might be available to them, under the present condition of our channel.

In 1917 Congress adopted a 30-foot channel, and at that time we had a controlling depth of 26 feet in the channel. At this good hour the controlling depth is 26 feet.

I am just in receipt of the following telegram which will give you some idea of the great handicap under which the ship operators are laboring at the port of Mobile and the loss to our commerce by virtue of the channel's depth, also showing some ships constructed which could not load to capacity:

Congressman JOHN McDUFFIE,

*Washington, D. C.:*

Replying to your inquiry, would advise four steamers, constructed at Chickasaw, namely, *Chickasaw City*, *Ensley City*, *Mobile City*, *Birmingham City*, requiring 28 feet fresh water, four others, *Montgomery City*, *Tuscaloosa City*, *Bessemer City*, *Gadsden City*, requiring 27 feet 10 inches fresh water to take advantage of their dead-weight capacities. If these ships make six trips each yearly they have suffered loss upon 48 voyages. Every ship line is suffering. Waterman Lines always unable to load steamer *Eastern Sun* to dead-weight draft, 27 feet 7 inches fresh water. Page & Jones, handling steamers Atlantic & Gulf Pacific Line to Pacific coast, unable to load three of their largest steamers carrying around 12,000 tons dead weight to dead-weight draft, which is 30 feet 6 inches. These ships want to carry dead-weight cargo, such as iron pipe, pig iron, etc., from Birmingham district. C. U. Snyder & Co. have been unable for years to bring their blackstrap molasses tankers to Mobile loaded to their dead-weight draft, 27 feet 6 inches. Mobile liners, representing fleet of 41 steamers, can only load 26 ships to their dead-weight capacity. Mobile liners want bunker at Mobile; their steamers now loading at Galveston, but can not bunker at Mobile because of insufficient depth of channel, and thereby losing benefit of river transportation on coal. Remember these ships of Chickasaw, Snyder & Co., Waterman, Page & Jones, and Mobile liners will all make about six trips each yearly when running regularly.

HORACE TURNER.

Mr. Turner, the sender of this message, is a large shipowner and operator himself, and probably is more familiar with our port condition than anyone else. You will observe from his telegram that there are something like 250 sailings each year affected by the depth of the channel, and you can readily see how vitally important to the commerce of the Nation, and especially the Gulf States and the Mississippi Valley, is deep water at the port of Mobile. Surely the committee must be impressed with the idea that it would be the part of economy for the Government to complete at the earliest possible date the project for this port, because the present condition is such a great drawback to commerce and so seriously interferes with the operation of larger ships using the port. You will find from the letter of Mr. Turner, as well as the resolutions I have submitted, that it is a fact that the controlling depth of the channel of 31 miles from the city to the Gulf is to-day 26 feet 6 inches.

I sincerely hope that your committee will find it expedient to appropriate money enough for the early completion of the project.

HUDSON RIVER CHANNEL, N. Y.

Mr. SMALL. Now, Mr. Chairman, this would probably be a good place to make a suggestion that I have been waiting to make. One of your New York constituents, not from your district but from the city of New York, is here and I took the liberty of telling him last night that he might have five minutes to tell the committee how important the further improvement of your channel in the Hudson River opposite Weehawken is, and if we do not divert him too much we will keep him down to five minutes.

Mr. DEMPSEY. All right.



**STATEMENT OF MR. CLARENCE T. BIRKETT, NEW YORK CITY.**

Mr. DEMPSEY. Mr. Birkett, Mr. Small says we are to have the pleasure of hearing you for five minutes on the channel in front of Weehawken and Edgewater in the Hudson River.

Mr. SMALL. That is page 306 of the annual report.

Mr. DEMPSEY. For your information, Mr. Birkett, I will state that there is on hand to the credit of that project now practically \$200,000 in cash, and there is a like amount in outstanding contracts, making about \$400,000.

What have the expenditures been on the channel for the last two or three years, Gen. Taylor?

Mr. BIRKETT. I think it is safe to say that there is no stretch of navigable river in the world where the development is as great as it is there. At present the Cunard people are building a \$50,000,000 terminal; the Luckenbach Steamship Co. a \$10,000,000 terminal; the Lord Drydock Construction Co. a \$10,000,000 dry dock, so that they can repair and build any size vessel afloat. And, of course, they really need 40 feet of water. There is a big pier out in the river and there is a channel along there which has just been dredged out. There were two suckers there—I think that is the name——

Mr. SMALL. Hydraulic dredges.

Mr. BIRKETT. Hydraulic dredges, I have forgotten the name. Gen. Taylor knows. That channel is to have 26 feet when they finish, and they are almost finished, but there were soundings taken in front of the Warner Sugar Refining Co., toward the south end of the mouth, and that filled in a foot a month because of the bar, which is muddy. The tugboats go over this bar which is only about 15 feet deep, and that stirs it up and it flows over into the channel.

Mr. SMALL. You are advocating an appropriation for the further improvement of the channel of the Hudson River opposite Weehawken and Edgewater, which is on the New Jersey side, for which the estimate is made on page 310 of the annual report, \$440,000.

Mr. BIRKETT. Yes.

Mr. SMALL. And whom do you represent in this?

Mr. BIRKETT. I represent the Hudson River Improvement Association. That is an association made up of 24 members of all the big interests there, including the railroads, that are interested in that section of the river, except the Central Railroad of New Jersey.

Gen. TAYLOR. Answering the chairman's question of a moment ago, the expenditures for the last three years have been \$212,000, \$330,000, and \$481,000.

Mr. DEMPSEY. Now you have approximately \$400,000 on hand; half of it is cash and the other half in outstanding contracts.

Mr. BIRKETT. Yes.

Mr. DEMPSEY. And the estimate is for \$460,000 in addition to that?

Mr. BIRKETT. Yes.

Mr. DEMPSEY. Now it is going to be possible, I will say to you frankly, to get the amount of the estimate.

Mr. BIRKETT. Would it not under any circumstances?

Mr. DEMPSEY. I doubt it very seriously in this bill.

Mr. BIRKETT. There is a stretch of 3 miles where about \$100,000,000 is being spent on new enterprises entirely with the hope and faith that

the Government will make the channel navigable for their uses. That is all there is to it. No amount of oratory will change that. The people have the hope that the Government is going to make the depth of the channel sufficient for their business.

Mr. SMALL. I call attention to the fact that this estimate of \$750,000 is not only for the further improvement of the New Jersey side, but also on the New York side, including the rock from Pier A, costing \$10,000.

Mr. DEMPSEY. Yes, \$300,000 on the Manhattan side and \$440,000 on the Weehawken-Edgewater front.

Mr. BIRKETT. The Manhattan side is fortunately very deep water, and that does not fill in at all. If you had one of the maps of the river here, it would give you an intelligent idea of the situation. Soundings have been made up to December 31, 1919. If you have maps of those soundings—

Mr. SMALL. Your proposition is that you need a deeper and wider channel in order to accommodate the commerce which will follow these improvements?

Mr. BIRKETT. Yes, sir. I think the bars should all be taken out.

Mr. DEMPSEY. Now let me see where.

Mr. BIRKETT. It is above Weehawken, where the big Cunard terminal is going to be put in; then here [indicating] is the large dry dock corporation; and the New York Central corporation wants to spend \$5,000,000 in here.

Mr. DEMPSEY. And West New York and Weehawken?

Mr. BIRKETT. Yes. There is a valuable stretch there that was owned by the Woodcliffe Land Co., a very valuable stretch of waterfront property, and they sold it to the Lord Dry Dock Co., a corporation. The New York Central has not room enough, so they are going to drill through the bank, and then they will be out on the Meadows. They are going to spend \$5,000,000 there on that 1,000 feet, and the Lord Dry Dock Co. will occupy 2,100 feet. The Lord Dry Dock Co. is quite a plant. I recently sent you a letter dictated by them showing what they are going to do.

Mr. SMALL. This map takes you farther up.

Mr. BIRKETT. Yes; up to the reservation. No work can be done above here [indicating] on account of the reservation. There are no terminals going up there. It is a park reservation. Palisades, park, corporation, or association from here down.

Mr. DEMPSEY. Below the Palisades?

Mr. BIRKETT. Yes. The Government in 1913 passed a bill appropriating \$1,570,000, I think it was. There was nothing done here, and since that time there has been an enormous increase.

Another important company—the United States Aluminum Co.—have built an enormous plant there and are just about to build a terminal employing 10,000 people.

Mr. DEMPSEY. The Aluminum Co. of America?

Mr. BIRKETT. Yes. It is the American Aluminum Co., and they have consolidated with some others. It is right in here. This is an old map. There are two ferry slips there now. This shows but one. Here is the Great Warner Sugar Refining Co., that has grown up by leaps and bounds, just as soon as they got water to operate. In 1910 they made 400 barrels of sugar per day, and they are now producing over 11,000 barrels of sugar a day, and they are increasing their

capacity. They are building another warehouse, as I stated before, a great, big warehouse right below the sugar refining company, and they are going to spend several millions on that. Their dockage is about 2,000 tons a day in and out, or 4,000 tons a day. You know there have been many rivers improved in the United States where the total tonnage in a year would not amount to that, along the entire length of the river, and there were over 75,000,000 tons 10 years ago up and down and across that river. I get that information from your records and from statistics, and of course New York Harbor in the last few years has passed all the harbors in the world in total amount of tonnage. London was the greatest harbor formerly, and New York, with the facilities that have been furnished and with what it has done itself, has become the largest port in the world, and I think it would be well to keep it so.

Mr. DEMPSEY. I agree with you.

Mr. BIRKETT. It is equipped to do the business; it is the best place to get new business because you have all the facilities there, and you have all the money in there.

Mr. SMALL. You have made a very strong case.

Mr. BIRKETT. I thank you very much for your consideration.

Mr. DEMPSEY. We are very much obliged to you.

#### HILLSBORO BAY, FLA.

Mr. DEMPSEY. The next item is Hillsboro Bay, Fla. There is an appropriation asked for of \$585,000 for further improvement. There is \$229,000 on hand in cash and \$64,000 in outstanding contracts. It will take \$507,000 more, I take it, besides the \$585,000 to complete the improvement.

Gen. TAYLOR. That \$507,000 is a mistake. That is the amount that was used on the basis of the original estimate and has not been changed.

Mr. DEMPSEY. I see that project is for a depth of 27 feet.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. In Tampa, Fla., a harbor, with a width of 500 feet outside and 300 feet in Tampa Bay and 200 feet in the Hillsboro Bay and certain other parts. They say the 24-foot project is practically completed and the 27-foot project 13 per cent completed. The estimate is for obtaining a 27-foot project by dredging and rock excavation, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Well, that is a large harbor, and the question is simply one of what the conditions will permit. About all you can say about it is, what the condition of the Treasury will permit us to allow?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You regard that as essential—all that you can secure at the present time?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Is there anything more that you can say about that?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. Of course, you have on hand a fair amount of money?

Gen. TAYLOR. Yes; but that will all be exhausted by the 1st of July.

Mr. SMALL. Gen. Taylor, this is an important harbor, and the whole of the previous project is substantially completed, and substantially nothing has been done toward the improvement of the new project; but in view of the necessity of economy can that estimate of \$585,000 for Hillsboro Bay be reduced without serious injury to the harbor, and if so, to what extent?

Gen. TAYLOR. Any reduction in the estimate will necessarily slow up the rate of progress on the new project, and it should not be reduced if it is possible to avoid it. But if necessary to reduce it at all, I think that under those circumstances it should not be reduced below \$325,000, which is the amount necessary for the operation and repair and upkeep of the Government dredge which is employed in that harbor and which is especially adapted to the character of excavation which it is necessary to make in that channel, the channel being for a large part through coral rock, which is very difficult of excavation, and which the ordinary pipe-line dredge will not excavate at all. There are one or two contractors that have special powerful plant capable of taking out that material, but there are only very few plants that I know of that can handle it economically.

Mr. DEMPSEY. And the amount of your appropriation, as suggested, \$325,000, would have this advantage, that you have found in that particular harbor that the Government can itself do the work with considerable more economy than you can secure it under contract?

Gen. TAYLOR. Yes, sir.

Mr. Chairman, Gen. Beach came up here in connection with the estimate for the mouth of the Mississippi River and one or two other items in the New Orleans district.

Mr. SMALL. That is just the page beyond, Mr. Chairman, page 24 of our memorandum book.

Gen. TAYLOR. We are now on page 23; that is the first item on page 24.

#### SOUTHWEST PASS, AND SOUTH PASS OF MISSISSIPPI RIVER.

Mr. DEMPSEY. The first item is for Southwest Pass, and that is the principal entrance to the Mississippi, is it not?

Gen. BEACH. No, sir; the South Pass is. South Pass is the one which has sufficient depth to accommodate the vessels that enter the port of New Orleans to-day. Southwest Pass has had a depth of 35 feet, but we have not been able to maintain it with the jetties constructed as they are. They were originally built farther apart than is necessary to obtain the desired scour, but I am not prepared to say that they were really improperly located, because the work at the mouth of Southwest Pass is, I believe, the most difficult engineering work that the United States has ever undertaken, for the reason that the material is so soft and shifting and so easily eroded that it is a case where you have to proceed very cautiously and very carefully, or you will have the river rip out everything that you have done. The river is constantly bringing down such immense quantities of silt, and you have to struggle with new deposits of that silt.

The bar at the mouth of Southwest Pass tends to advance seaward about 250 feet a year, and you either have to dredge through that bar or have your jetties extended sufficiently far into the Gulf so that the force of the current will continue to erode that bar. Those conditions do not exist to the same extent at South Pass, for the reason that that is much smaller and does not carry the same amount of silt, and consequently you do not have to struggle with as much deposit as at Southwest Pass. South Pass, however, is very narrow.

Mr. DEMPSEY. How narrow?

Gen. BEACH. I do not remember the exact width.

Gen. TAYLOR. It is about 200 feet wide.

Gen. BEACH. It is a little wider than that, I think.

Mr. DEMPSEY. That is on page 937—not less than 200 feet wide—at the bottom of page 937—and having through it a central depth of 30 feet without regard to width. I do not know what that means “without regard to width.”

Gen. TAYLOR. It means that the contract for that work provided that it should have a channel of 200 feet in width and at least 26 feet in depth.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. And that there should be a channel of 30 feet depth through, but no width was provided—a channel of 30 feet depth in the channel 200 feet wide and 26 feet deep. Mr. Eads complied with the terms of his contract, no width being specified; in fact, if he had a channel a foot wide and 30 feet deep he complied with that part of his contract.

Gen. BEACH. I think it is a little wider than 200 feet.

Gen. TAYLOR. Not very much.

Gen. BEACH. I was thinking it was 300 or 350 feet between the tops of the banks.

Gen. TAYLOR. Oh, that may be.

Gen. BEACH. I was not speaking of the channel.

Gen. TAYLOR. I was.

Gen. BEACH. The Southwest Pass is between 1,300 and 1,400 feet in width between banks.

Mr. DEMPSEY. Then the reason for the improvement of Southwest Pass is that it is deemed impractical to widen South Pass, or at any rate that it would be more practical or less expensive to improve Southwest Pass than to attempt to widen South Pass?

Gen. BEACH. It was regarded as a very dangerous proceeding to attempt to disturb the conditions in South Pass because the material forming its banks is so soft that any considerable change in the conditions is liable to produce scour and probably shoaling, so that it was felt that the Southwest Pass had better be opened up if possible.

Another reason why it was regarded as advisable to use Southwest Pass instead of South Pass is that South Pass is so very narrow that in case a fog comes down it becomes very dangerous for the vessels navigating it, especially if there is more than one vessel in the Pass at the same time, because there is hardly room to turn out; the banks are so low that they can get no echo from the whistle or bell, and there is nothing whatever to guide them; and it was felt that if there should be a collision, or vessels should by any mishap be sunk in South Pass the whole port of New Orleans would be bottled up.

Gen. TAYLOR. There is still another reason why it would not be advisable to increase the width of South Pass, and that is that the banks between the Pass and the Gulf on each side are so very narrow that if you should widen the Pass even a little you would be liable to create an opening between the Pass and the Gulf which would make a crevasse through, and absolutely close the Pass; that would be a very serious danger.

Mr. DEMPSEY. I did not quite understand that, Gen. Taylor.

Gen. TAYLOR. Have you a map?

(A map was produced.)

Gen. BEACH. I can show you the conditions you will find on all those rivers in southern Louisiana whose banks are built up by a sedimentary deposit. You will find that banks—this being the stream [indicating]—the banks are highest immediately adjacent to the stream itself, and as soon as you get a little distance back, 1,500 feet or more from the banks, you will begin to come into low ground, and consequently, if you break through this bank you will absolutely destroy the banks of South Pass.

Now, around New Orleans the immediate banks of the Mississippi are about 12 feet high originally before levees were constructed, but they sloped back, and at the distance of about half a mile from the river they were only about 4 feet above sea level, and when you get back about a mile from the shore the ground was down to sea level; and this condition about the immediate banks being the highest point adjacent to the stream would prevent you from attempting to enlarge any mouth of the Mississippi like South Pass. You can not cut through those banks without producing the result Gen. Taylor spoke of.

Mr. DEMPSEY. Could you not then build a new bank back of the present bank?

Gen. BEACH. You can not do that on account of the fact that the material is so soft that it will not hold the deposited material upon it.

The CHAIRMAN. I see.

Mr. DAVIS. He is referring to the South Pass.

Gen. BEACH. Not only the South Pass, but on any stream down in the alluvial delta of the Mississippi. Now, look on this map which shows the narrowness of the banks—this is the edge of the marsh as shaded and outside of that is the water; you can see how very narrow the bank adjacent to South Pass is, and you could not widen that.

Mr. SMALL. Where is the city?

Gen. TAYLOR. A hundred miles up; it is not shown on that map; that is a large scale map taking in only a distance of about 20 miles.

Mr. DEMPSEY. Now, of course, South Pass is more direct and shorter.

Gen. TAYLOR. It depends upon which way you are going, Mr. Chairman. If you are going to Panama, for instance, the Southwest Pass is shorter; if you are going to Key West there is practically no difference, Key West lying off here; so that the difference in distance between going out from South Pass and Southwest Pass would not be appreciable.

Mr. DEMPSEY. As I understand it, Gen. Beach, what you mean with reference to deepening this is that material of a suitable kind is not obtainable to build a wider bank here; is that it?

Gen. BEACH. It could not be placed there without sinking down into the ground where it was deposited.

Gen. TAYLOR. It is not the fact that material is not obtainable, but that this ground is so soft it would sink down out of sight; you could not find it; it would be just like throwing it into the water; it would sink out of sight.

Gen. BEACH. I might state for illustration the case of some parties who came down from the North and attempted to develop certain tracts of ground in certain parts of southern Louisiana by cutting drainage canals through those swamps. They took dipper dredges and dug the canal and deposited the stuff on the banks. I myself have gone along there a year later and you could not see a bit of that material that had been placed there by the dredge, it had all sunk down into the ground, and the ground itself there is all soft and grass is growing over it just as though the dredges had not been there: this material all through there is neither water nor land.

Mr. DAVIS. It comes from above and is washed down.

Gen. BEACH. Part of it belongs to your city, sir.

Mr. DAVIS. St. Paul and Minneapolis, but then the Missouri River furnishes part of it.

Gen. BEACH. Yes, sir; the Ohio and upper Mississippi.

Gen. TAYLOR. Comparatively little comes down the Mississippi.

Mr. DEMPSEY. The one thing I have questioned in regard to these passes is the necessity of an additional pass; and there seems to be quite a good deal of question in the minds of the average Member of Congress as to the necessity of developing more than one pass, and that is the reason I am trying to put that on record.

Gen. TAYLOR. Mr. Chairman, a little over a year ago a collision occurred in South Pass, in which two vessels were sunk. Fortunately both of them before they sank were pulled up practically parallel to the bank and out to one side, but if those two vessels had happened to have sunk across the channel New Orleans would have been absolutely bottled up; they could not have got in or out of New Orleans; and as it is, those vessels lying there have caused serious conditions in the pass.

Mr. DEMPSEY. Suppose we grant, for the purposes of this question, that South Pass is insufficient and must remain so; should not you then devote your money and your effort to the development of Southwest Pass and only develop one pass?

Gen. TAYLOR. That is what we are doing with this appropriation; all that we are doing to the South Pass is simply maintaining the pass in its existing condition until such time as we can open up Southwest Pass. We will also maintain South Pass afterwards, the expense of maintaining it not being so very heavy and there always being danger at the mouth of the river with only one outlet.

Mr. DEMPSEY. You mean that that one outlet might be put out of condition through shoaling or filling?

Gen. TAYLOR. Or an accident, a collision.

Gen. BEACH. You can not tell what may happen where the material is as soft as it is there. I would just invite attention to some of these little outlets. There is Scotts Canal, as it is called, and Double Bayou. They were closed while I was down there by driving piling down and blocking them off slowly and gradually, because we felt if we did it too soon we would create too strong a current through

there and tear the banks out. We closed one or two at a time, and then after a month or two closed some of the others.

We had one case where the piling was 18 feet long and driven 4 feet into the mud, the bayou being 14 feet deep. A little rise in the Mississippi came along and the water rose 2 feet higher on the Southwest Pass side of that dam than it was on the gulf side. The two feet pressure or the pressure due to that two feet of head blew out all that four feet of mud at that distance and washed under the deep piling and left it hanging in the air. Now, when you can blow out four feet of mud with a head of two feet of water you can see what soft material you are dealing with; and that is one of the things that makes it very difficult working out at the mouth of the pass. We have to go carefully and spread our jetties wide enough to give a firm base almost like snowshoes.

Mr. DEMPSEY. I see.

Gen. BEACH. But you can easily see that if we go along slowly the river deposits the material and we do not secure the results; and what we are requesting is sufficient money to proceed with that work at the proper rate to secure some definite result instead of letting it drag along and letting the river catch up with us and undo what we are doing.

Gen. TAYLOR. The advantage of a large appropriation, Mr. Chairman, will be that we will be able to prosecute our work rapidly, and, as we believe, successfully complete the improvement. If you cut the appropriation down and only give us an amount sufficient to drag along, as Gen. Beach says, the river is going to be right on us all the time; we are going to be forever catching up. The result is you might spend millions of dollars slowly down there and never get anywhere, but by spending a proper amount rapidly you can complete the project.

Mr. DEMPSEY. I wish you would indicate here on the map, at the same time you describe for the record, what you are doing at the entrance to Southwest Pass.

Gen. BEACH. We are building these inner jetties; you see them indicated on the map.

Mr. DEMPSEY. Which means nothing more nor less than——

Gen. BEACH. Longitudinal walls.

Mr. DEMPSEY. Yes.

Gen. BEACH. You can see they are shown here as having been built out to that point which is well within the ends of the outer jetties; and we want to extend those and carry them out sufficiently far to concentrate the current on this bar and cut through it.

Mr. DAVIS. What material do you use there in building jetties in a place like this?

Gen. BEACH. They are built of bundles of brush, mostly willow, tied together so as to make large mats and weighted with stone.

Mr. DAVIS. Weighted down with stone?

Gen. BEACH. Yes, sir; weighted with stone.

Mr. DEMPSEY. Then you depend upon the natural working to make a combined mass; it does combine, does it, after you have put it in there in that way?

Gen. BEACH. Fills with mud.

Mr. DEMPSEY. And that mud acts as a cement?

Gen. BEACH. No, sir; but it acts as a——



Mr. DAVIS. It solidifies the whole.

Gen. BEACH. Not solidifies, but it makes it sufficiently solid that the water does not escape through it; it does not fasten the whole together. For instance, you can take a derrick and lift a rock that you can take hold of with it right out of that mud; it does not hold it to any such extent that you could not do that.

Mr. DEMPSEY. But it holds it to resist the water itself, the source of the trouble?

Gen. BEACH. Yes, sir.

Mr. DEMPSEY. And how lasting will that be? What I was trying to get at particularly was does it solidify to the extent that it becomes a permanent wall?

Gen. BEACH. Yes, sir.

Mr. DEMPSEY. One that does not decay?

Gen. BEACH. Because a timber under the water lasts indefinitely.

Mr. SMALL. Fresh water.

Gen. TAYLOR. Or salt water where the teredo do not attack it, and where it is filled with sediment under water the teredo do not attack it. They attack things above the mud line. You might tell Mr. Dempsey that the jetties which have been built down here have been sinking so that there will be a little cost for maintenance for building them up as they sink. The bottom is so soft that the jetties we built several years ago have sunk down to about the water surface. In some places the top of the jetty even is a little below the water, and we have been obliged to build them up by putting new tops on them.

Mr. DEMPSEY. How high above water do you build them?

Gen. BEACH. About 4 feet, to start with.

Mr. DEMPSEY. How high ultimately?

Gen. BEACH. What did you say?

Mr. DEMPSEY. How high ultimately?

Gen. BEACH. Then we try to maintain them at that height, sir.

Mr. DEMPSEY. You try to maintain them at 4 feet?

Gen. BEACH. We try to keep them out of the water, sir.

Mr. DEMPSEY. Yes.

Gen. BEACH. Now, to show you how soft the material down there is and how heavy bodies deposited on it will sink, here on the map is shown an old light tower. That was a lighthouse built, I think, shortly after the Civil War. At the time it was built the doorsill going into that door was 8 or 9 feet above the surface of the marsh. When I was down there eight years ago that lighthouse had sunk into that mud so that the only way you could get in was to get down on your hands and knees and crawl into the little piece of the door that was left above the top of the mud. The lighthouse had not tipped; its foundations were sufficiently good so that it had stood erect, but the whole mass had sunk into the soft material a distance at that time of about 9 feet that was originally above the floor and about 4 feet on the height of the door, about 13 feet.

The CHAIRMAN. Mr. Small, do you wish to ask the general specific questions in regard to this item?

Mr. SMALL. I think I see the problem. This South Pass was important because of the contingency which Gen. Beach described; its narrowness made possible an accident which would close it and thereby close the port of New Orleans; and the situation with regard

to Southwest Pass at the present time from reports is this: The controlling depth of South Pass is 32 feet, sufficient for the commerce of New Orleans, but if this contingency should happen, which it is feared might occur, it would throw the shipping into Southwest Pass, where the controlling depth at the present time is but 19 feet; and the last annual report, on page 2382, under the paragraph "Navigation of the channel," and referring to the type of vessels which use the pass going up to New Orleans, says:

The total number of seagoing vessels which navigated the pass during the fiscal year was 4,987; of this number 4,871 or 97 per cent navigated South Pass. Of the total number of vessels, 631 drew 25 feet or more. There were 12 ships which drew 30 feet or more, 4 inbound and 8 outbound. The maximum draft carried through the pass during the year was 31 feet 6 inches.

Gen. TAYLOR. That is all the draft they could carry through.

Mr. SMALL. Which is all the draft they could carry through. So: the only conclusion from those facts is this: that the necessity of continuing work on the Southwest Pass is very urgent. It is not necessary to refer to the engineering difficulties that have been described by Gen. Beach and Gen. Taylor, but this fact should be emphasized: that it is impossible to improve the South Pass by widening it; that with the completion of the Southwest Pass, as I understand the opinion expressed by Gen. Beach it is hoped that it will constitute a permanent channel with a renewance cost of maintenance by reason of the increased scouring. So, it is only a question of how much we can afford to appropriate.

Mr. DEMPSEY. What do the practical navigators say, suppose you complete the Southwest Pass, as to which pass would be used; I mean if they are left free to select?

Gen. BEACH. The agents of some of the largest steamship lines entering the port of New Orleans gave orders when I was in charge of that district and had secured a 35-foot channel in Southwest Pass that their vessels should use it, as they regarded it so much safer and more practicable than South Pass; and I think that is a fair view of the condition. I know that a great many of the vessel men are constantly apprehensive of conditions in South Pass on account of the narrowness of the waterway. Now—

Mr. DEMPSEY. Just a moment, Gen. Beach. You said in your last answer "when you had secured a depth of 35 feet," I think you said, "in Southwest Pass."

Gen. BEACH. Yes, sir. I did have a depth of 35 feet in Southwest Pass when I was in charge of that district. We had secured that with dredges and we maintained it for some little time. When I left there the depth was 35 feet, but the jetties were too far apart to concentrate the scour of the river on the bar and they could not maintain it.

Mr. DAVIS. And after Southwest Pass is completed in perfect running order, those who desire to use South Pass will continue to do so if they deem it advisable or available?

Gen. BEACH. I expect so, sir.

Mr. DEMPSEY. Is it the fact that Southwest Pass shoaled in from 35 feet down to a controlling depth of 19 feet?

Gen. BEACH. Yes, sir; and let me show you one thing that I did while I was there. When I had secured this depth of 35 feet I marked the channel by large spar buoys which were practically

telegraph poles with a big mushroom anchor at the lower end. These were placed in 30 feet of water parallel to the channel of 35 feet which had been secured. One day they reported to me that the outer buoy was sinking, apparently, that the river was deepening at that point. I gave orders to take soundings and to watch the buoy and the locality carefully and if there was any danger of the buoy sinking beneath the surface of the water to pick it up and put it on the wharf up at Burrwood, where we have our engineer station. About three days later they reported to me that the buoy had been picked up and put on the wharf and that there had been a hole of 104 feet in depth scoured where that buoy had stood. That hole lasted for about three months. Then the river came along, filled it up again, as it was before. We were never able to discover what started the trouble, but an eddy was formed at about the point where that outer buoy was and that eddy dug out a hole to that depth; and when the eddy ceased then it filled up again.

Mr. DEMPSEY. How long ago did you leave there, General?

Gen. BEACH. That was the summer of 1912.

Mr. DEMPSEY. That is nine years ago; then there have been large appropriations for maintenance down there since.

Gen. TAYLOR. There have been appropriations for it nearly every year, but they have not been sufficient to enable us to finish up the work. The work was not quite finished when Gen. Beach left there. If we had had appropriations at that time large enough to have gone ahead and finished it up we could have held all we gained; but due to the small appropriations which we have had since we have not been able to keep up with the river.

Gen. BEACH. I do not want to convey the idea that my channel of 35 feet in depth was of project width by any means; it was only a narrow channel.

Mr. DEMPSEY. What do you mean by completing the Southwest Pass; so as to maintain the depth at 35 feet?

Gen. TAYLOR. I mean the completion of these stone jetties or bulkheads which are 2,400 feet apart—have you got a large-scale map of this district? It would show the actual conditions there a little more fully than this small-scale map. You see that wherever we have a channel of 2,400 feet in width in the Southwest Pass we have a channel of 35 feet or more in depth; in other words, the amount of water going through the Southwest Pass is such that it will maintain a channel approximately 2,400 feet and 35 feet or more in depth.

Mr. DEMPSEY. In the center?

Gen. TAYLOR. No, sir—well, a fairly wide channel. We get a very satisfactory channel of project dimensions with a width of 2,400 feet between jetties; but when the jetties were first built, for reasons of economy and as directed by Congress, the jetties were built wider apart. That produced temporarily the condition which Gen. Beach spoke about; but not having money enough to complete the project the temporary satisfactory condition soon passed and the river commenced to shoal.

Mr. DEMPSEY. Is there anything in the idea that the jetties should be completed before you should attempt to do additional dredging; in other words, is your work of dredging simply something that has to be done over and over again until you get the jetties completed?

Gen. BEACH. We are not dredging at the mouth of the river there now.

Gen. TAYLOR. Not at all.

Gen. BEACH. But the water flowing down through any channel of practically uniform width will spread out and deposit its material just as soon as any banks or jetties which confine it to this width terminate. The result is that if you do not have those jetties extend to the bar as soon as the water reaches the ends of the jetties it expands, drops its material, and you get a deposit right there. The consequence is that you ought to have your jetties carried parallel out to the outer edge of the bar so that material is carried by the current without diminution of flow until it reaches the end of the jetties and then is swept to one side by the current of the Gulf.

Mr. DEMPSEY. In other words, when you get beyond the bar and reach the waters of the Gulf proper you get a condition that will take care of this silt and instead of being deposited in the channel and at the outside of the channel it is carried on out to sea?

Gen. BEACH. Yes, sir.

Mr. DEMPSEY. Then, Gen. Beach, it is a condition and not a theory that confronts us and that has got to enter into the making up of this bill. Having in mind on the one hand that it is important to complete the jetties of Southwest Pass so as to enable water flowing through that pass to give you a channel of the needed depth of 35 feet and that the channel is needed because the South Pass is narrow and dangerous and can not be widened; having all those facts in mind as important in urging a considerable appropriation, at the same time bearing in mind the fact that we must limit all appropriations in this Congress in view of the war burden of taxation and the difficulty of raising the amount needed, what do you think you would regard as essential for this item? We have got to cut the estimates generally, and while this is important as a single item we have situations confronting us of great importance all over the country and we have cut them. Frankly, at Philadelphia, New York, and Savannah—you can go right along the seacoast wherever we go and find projects of great importance needing attention. Having all that in mind what would you say in your judgment should be appropriated here in view of the importance of the work and having in mind the importance of the work and its performance in an economical way?

Gen. BEACH. I will say that there is not, as far as I can remember at this time, any place in the United States or any of the items that are in the bill which you are considering where you will lose as much money, as large a percentage of what you have already put in, as you will at the mouth of the Mississippi River if you do not make the appropriation sufficiently large to carry on this work vigorously. It is the one place where the expression "penny-wise and pound-foolish" I think applies more strongly than at any other river and harbor improvement that is being considered by the committee.

Mr. DEMPSEY. Having that in mind, and having also in mind that while the commerce here is large it is not as great as it is at other points where we will have to cut, suppose you glance over the details of the estimate and see what you think could be economically and wisely deducted from the amount suggested in the estimate.

Gen. BEACH. The item, "extension of jetties, \$1,420,000," we regard as absolutely imperative unless you are going to waste a great deal of money which has already been expended there. The next item, "completion of bulkheads, \$627,000," is also urgent; the next item, "repairing and capping of existing jetties, 18,750 linear feet," is important, because it prevents the lateral escape of the water which should be maintained in the channel and between the jetties in order to produce these upon the banks. However, the inner jetties will do a great deal to prevent the escape of that water, and it is possible that we could get along by reducing that amount \$300,000, and take practically half of it.

Mr. DEMPSEY. What page is that on?

Gen. BEACH. Page 935.

Gen. TAYLOR. That is, it would leave for appropriation \$393,000. Gen. Beach means, reducing the item by \$300,000, leaving for appropriation, \$393,000.

Gen. BEACH. The next item with regard to dredging might be dispensed with, which would take out \$150,000.

The question of maintenance of dikes, bulkheads, mattress work, etc., about East Jetty Light, and maintenance of shore plant was what we estimated would be required. However, if it would be absolutely essential, we could take some money from the first two items, possibly, and we could probably get along if we had \$100,000 in that item, reducing it by \$150,000.

Mr. SMALL. That is reducing that item of maintenance.

Gen. BEACH. Reducing that item of maintenance to \$100,000, so that it is possible we could get along if we reduced that total of \$3,140,000 by \$600,000.

Mr. DEMPSEY. Mr. Small, have you any additional questions you wish to ask of the general?

Mr. SMALL. I do not think so.

Mr. DEMPSEY. Have you any, Mr. Davis?

Mr. DAVIS. No.

Mr. DEMPSEY. Mr. Dupré, would you like to ask any questions of the general? I will say to you generally that we have had a discussion of the necessity of the improvement of Southwest Pass. Although South Pass is used, in view of the fact that the latter is narrow, it can not be widened. And then we took up, after having gone over the necessity for improvements, the question of the amount that, in view of financial conditions, could be used in the improvement of Southwest Pass. The amount suggested in the estimate is \$3,140,000, and Gen. Beach has just stated that, taking everything into consideration, they can get along with \$2,500,000.

Gen. TAYLOR. Mr. Dempsey, I think that ought to be corrected; we do not say that we could get along with \$2,500,000, but if we have got to be clubbed over the head and have some of this taken away from us, that is what we give up with the least objection.

Mr. DEMPSEY. Now, we will put Gen. Taylor's remarks first and leave Gen. Beach's words as a last remark, because they are milder.

Mr. DUPRÉ. Mr. Chairman, I am very sorry I was not over here when the discussion of this very important item was first reached. I asked the clerk of the committee to notify me when this matter was reached for hearing, and he did so, but I happened to be on the floor

of the House and did not learn of it until my return to the office a moment ago.

Mr. DEMPSEY. The reason we took it up as we did, Mr. Dupré, was because Gen. Beach was here and was only available at this time.

Mr. DUPRÉ. I am very glad to see him because there is nothing I could add to what Gen. Beach has said, because I do not know what Gen. Beach has said.

Mr. SMALL. He said it well.

Mr. DUPRÉ. The only point I would want to make, Mr. Dempsey, is this: That the improvement of Southwest Pass has been going on now for a great number of years—

Mr. DEMPSEY. By the way, how long has it been since the project was adopted—I see in the second paragraph on page 932 which says it was in 1902.

Mr. DUPRÉ. But they did not begin to make appropriations until some time thereafter.

Mr. SMALL. There have been several separate acts since then.

Mr. DUPRÉ. I am frank to say that the development that was expected through the improvement of Southwest Pass has been extremely disappointing due to a number of conditions. The Mississippi River is a problem that no engineering skill can anticipate and forecast; but I think that the major part of the trouble is due to the action of Congress—

Mr. DEMPSEY. The action or inaction?

Mr. DUPRÉ. Well, both. When the improvement of Southwest Pass was first suggested the engineers submitted a scheme to Congress which that body thought carried an excessive amount of money to be thereafter appropriated, and they adopted another plan. It was subsequently found—am I correct about that?

Gen. TAYLOR. Yes, sir.

Mr. DUPRÉ. It was subsequently found that proceeding on the plan of improvement Congress had ordered the engineers to carry out, results were not being obtained. It has been practically found necessary now, or it was some two or three years ago, to go back to the original plan. That has been one of the drawbacks to the completion of this work.

The other has been that there have been appropriations for this work in dribblets. It seems to me that if this committee would allow the sum of \$3,140,000 presently recommended that it would suffice to complete the improvement on the original basis to which we have now returned, instead of giving us an appropriation of \$1,000,000 in this bill if we are going to have an itemized bill, or making such a small lump sum appropriation that the Chief of Engineers would feel only justified in allotting any such sum as that.

Mr. DEMPSEY. What did you allot last year, Gen. Beach?

Mr. SMALL. \$800,000.

Gen. TAYLOR. That was out of the \$12,000,000?

Mr. DEMPSEY. Yes, and anything besides, out of what you had on hand.

Gen. TAYLOR. I think that is all the allotment that we have made.

Mr. SMALL. That is all your report shows.

Gen. TAYLOR. In some cases, Mr. Small, we have made additional allotments since, small additional allotments since.

Mr. SMALL. Oh, yes.

Gen. TAYLOR. But we have not for the Mississippi made any additional allotments.

Mr. DUPRÉ. \$800,000 was allotted out of the \$12,000,000 lump sum?

Gen. TAYLOR. Yes, sir; except they did in effect get about \$100,000 in another way. They had a tugboat belonging to the district which was not absolutely necessary; and another district needed the tugboat. We transferred the tugboat to the other district on the basis of the value of the boat which was about \$100,000; so that that money has been transferred. That will in effect be the equivalent of an allotment of \$100,000.

Mr. DUPRÉ. The point that I was hoping to make just at this juncture was that if anything is to be done for the mouth of the river it should be done in some complete and comprehensive way and not by piecemeal appropriations. You gentlemen can understand that if the engineers were given authority to spend some \$3,000,000 down there at one time they could make very much better arrangements about the contracts that they have to enter into to handle the project, than if they have to make a contract for this wing, and this dam, and this other proposition separately; and it does seem to me a piece of common, ordinary business policy to let this thing be completed at one dash; it is going to cost the Government that much eventually and why not, at this particular time, give them the amount they say is necessary to complete the Southwest Pass?

Now, so far as your saying, Mr. Dempsey, that the South Pass is used I will say of course it is used; it is the only pass that is being used. You can not expect Southwest Pass with about 15 feet of water, which is now the controlling depth, is it not?

Gen. TAYLOR. Eighteen or nineteen.

Mr. DUPRÉ. To be at all used; and I want here strongly to insist—it is not a matter that your committee should handle—I understand, however, that the engineering authorities feel the matter can be taken care of without a special appropriation for South Pass, but I must insist that it always be held in mind by this committee and by the engineering authorities that South Pass must be kept open. South Pass was the pass through which Eads built the jetties. There is grave fear down at New Orleans that the conditions at South Pass are dangerous. I am assured by Gen. Beach and Gen. Taylor that they are awake to the possibility of a crisis down there. We do not anticipate any such thing will happen, but until Southwest Pass is completed and a depth of say from 30 to 35 feet is given there we must always depend on South Pass.

Now, with what I have said with regard to South Pass, you need not specially burden yourselves, but I want to stress again the urgency and the common sense of winding up this improvement of Southwest Pass that has been going on since 1902 with an appropriation that will justify its completion one time. I am very much obliged to you.

Mr. DEMPSEY. We are very glad to hear from you, Mr. Dupré.

WATERWAY FROM THE MISSISSIPPI RIVER TO THE SABINE RIVER,  
LA.—FRANKLIN TO MERMENTAU SECTION.

Mr. DEMPSEY. Gen. Beach, was there some other section that you wanted to present to this committee this afternoon?

Gen. BEACH. One item I wanted to speak about particularly is the appropriation requested for the intracoastal waterway, Franklin to Mermentau. In regard to that I would like to invite attention to the conditions.

Mr. DEMPSEY. Where is that in the book here, what district is it in?

Gen. TAYLOR. It is in that same district, on the next page of your book.

Gen. BEACH. Now, if you will notice on this map the large area of southern Louisiana that is marked in blue, you will see that the number of square miles in that section is as great, if not greater than, the combined areas of Connecticut and Rhode Island; and if you will look at this map you will see that there are a number of streams running down through that marsh area from north to south.

All those streams have bars at the mouth. They are all of bayou formation—that is, comparatively deep and narrow, with very little current. They form the only means that the people have of passing from one place to another. The railroad that goes east and west is the Southern Pacific, which was placed as near the coast as it was practicable, and you will see that it is quite a ways from the Gulf coast. Now, I would say this does not give an idea of the situation, because this line of the railroad is on a ridge, with swamps north of it, but here you could not get south under any conditions. You see these streams all running through here. Now, that is a very fertile land; it is used for growing early vegetables that are sent to the northern markets; but these people have no means of transporting their goods and their produce except by boat.

The difficulty has been to get to New Orleans. Private parties have dug canals. You will see one indicated there, and another one there, and another one over there. They charge tolls, and it is desired to have a waterway under the control of the United States. The United States has recognized the fact that the waterway is necessary and has built a canal here running between Mermentau and Calcasieu. The only part, or the part to which it is desired to have the United States secure control now, is the part from the Mississippi over to Bayou Teche at Franklin, and a little piece from Franklin over to the Vermilion River at that point, and that canal will serve the purpose, you might say, of a cross-town line; it will gather in all the various waterways that flow north and south and enable their produce to be brought to market.

Mr. SMALL. And New Orleans is their market?

Gen. BEACH. New Orleans is their market and shipping point for the North.

Mr. SMALL. General, do you not think, now that we have adopted the project for the Mississippi River to Bayou Teche, do you not think that ought to be completed at the earliest date practicable—the project from the Mississippi to Bayou Teche?

Gen. BEACH. That is why I am here this afternoon.

Mr. SMALL. Well, you have been emphasizing the one from Franklin to Mermentau.

Gen. BEACH. That is also important, but the funds that are requested are largely for the other portion west of Bayou Teche. We ought to have enough over to secure these privately owned canals.

Mr. SMALL. I think so.



Mr. DUPRÉ. Just in this connection, your recommendation, Gen. Beach, for the Mississippi-Teche length is limited to \$100,000 for the stated purpose of only continuing work on natural waterways and not looking toward the taking over of the privately owned canals. When the project was first adopted, if I may say, an appropriation of \$100,000 was made, which was largely spent around Bayou Black, in the neighborhood of the city of Houma. I understand that the district engineer has asked for an additional \$100,000, which will likewise be expended in the development of natural waterways. It is not intended at this time to ask Congress to appropriate any money to take over by the Government any privately owned canal, though that is necessary in the ultimate development of the Teche-Mississippi link.

Now, just another thing, if I may be indulged for a moment; my colleague, Congressman Martin, is unable to be here. In discussing the item of \$456,700 asked for the inland waterway from the Franklin to Mermentau, it is stated that the necessity of this appropriation is dependent upon the outcome of certain condemnation proceedings in regard to the Hansen Canal. While a suit was tried in the United States district court for condemnation of this canal and an award was made for the amount that the Government contended should be paid, the canal people appealed to the United States Court of Appeals, and that case is set for trial in the month of March, 1921. And therefore at the time that this bill becomes a law, if it ever becomes a law, the Hansen Canal litigation will have been settled and, therefore, the necessity for this \$456,700 will not be dependent upon the acquisition by the Government of the Hansen Canal, because the Government will have acquired it at that time.

Well, the condemnation proceedings were heard in the United States district court before a jury; that case has been tried, and the amount that the Government contended should be paid to these people was the amount allowed by the jury. Thereafter these people took an appeal to the United States Court of Appeals, where it will be heard on appeal.

The amount necessary to pay the condemnation proceedings in the Hansen Canal has been heretofore appropriated. That is true, is it not, General?

Gen. TAYLOR. How is that?

Mr. DUPRÉ. The amount necessary to pay the condemnation proceedings in the Hansen Canal proposition has been heretofore appropriated by Congress?

Gen. TAYLOR. Yes.

Mr. DUPRÉ. The money is there, because Col. Dent wanted to pay the amount awarded and take possession of the canal at the time which, under the law, he could have done.

Mr. DEMPSEY. Now, General, suppose we turn to the details of the estimate here.

Gen. BEACH. If you gentlemen will excuse me, I think I will have to get back to my office to attend to my correspondence.

Mr. DEMPSEY. Do you want to say anything regarding the details of the estimate before you go, Gen. Beach?

Gen. BEACH. No, sir; I think Gen. Taylor is perfectly familiar with them.

Mr. DUPRÉ. General, do you want to say anything regarding the necessity of completing the work from Mermentau to Sabine, for which \$600,000 is asked? I just mention this at the instance of Congressman Lazaro, who is not able to be here.

Mr. DEMPSEY. Now, Gen. Taylor, this project, Franklin to Mermentau—

Mr. SMALL. Do you not want to take up this first item, Mississippi to Bayou Teche?

Mr. DEMPSEY. We have not said anything about that; we are on this Franklin to Mermentau item, and I think while we have it fresh in our minds it will be just as well to complete that. The project is for a depth of 5 feet and a bottom width of 40 feet. It was completed in 1913.

Gen. TAYLOR. Only one thing was completed; that is the lock—construction of the lock and dam in Schooner Bayou.

Mr. DEMPSEY. I see; it was just the tidal lock that was completed in 1913?

Gen. TAYLOR. That is all.

Mr. DEMPSEY. The project is 57 per cent completed. You will find that on the next page there, 989.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The work to be done is the acquirement of the Hansen Canal, lock construction, construction of bridges, construction of a new lock, lock master's quarters, and the completion of the Teche-Vermilion section. Now, your total estimate is as follows, is it not, General—\$160,000 for a bridge across the Southern Pacific?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. \$80,000 for a bridge at the Iberia and St. Mary River; new highway bridge, \$10,000; enlarging of the Hansen Canal, \$42,000; construction of new locks, \$100,000; overhead, \$63,900. General, I see the tonnage there is small.

Gen. TAYLOR. It is because conditions are very unfavorable for the use of the canal at the present time. I believe that when the canal is completed, when it is opened up right through and freed from tolls, that you will have a very large and valuable commerce there. I was down through that country last spring. I made the trip through those canals from New Orleans west, and I was very much astonished at the amount of business which is carried on in those canals and the great number of small boats operating there. I doubt very much if the commerce as shown in these reports covers anything like the full amount of commerce on those streams. Every farmer living around the stream has a little motorboat. A large part of the business is fishing—fish, oysters, shrimp, clams, and all kinds of shellfish.

Mr. DEMPSEY. Those bridges, I take it, have to be built before the project could be completed?

Gen. TAYLOR. Before anything could be done practically, yes sir; that is, before any material progress can be made. We could work on other parts of the canal, of course, if we had sufficient money, but the controlling features are these bridges; and the United States being the trespassing party, so to speak, is obliged to rebuild those bridges.

Mr. DEMPSEY. Let me make this suggestion to you, Gen. Taylor. You have three items, \$160,000, \$80,000, and \$10,000, making

\$250,000. I suppose the largest item of expense there is the steel-work?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The estimate was undoubtedly made on prices existing at the time the estimates were prepared?

Gen. TAYLOR. Undoubtedly.

Mr. DEMPSEY. Present prices are very much below the prices of three months ago, as has been mentioned in these hearings and in some other instances. Ought not we to obtain new estimates based on present prices with reference to this item?

Gen. TAYLOR. I think it would take us too long, Mr. Chairman.

Mr. DEMPSEY. I do not mean for you to send out, but you can get steel quotations.

Gen. TAYLOR. I can get steel quotations, but I do not know personally just what estimates were used, what unit price they used. Those estimates were made up in consultation with the engineers of the Southern Pacific Railway which has to provide a construction which we think reasonable and which will be satisfactory to the Southern Pacific. In order to revise those estimates it would be necessary to take it up again with those men and I really—

Mr. DEMPSEY. I do not mean to change your details at all.

Gen. TAYLOR. Yes; I understand that.

Mr. DEMPSEY. But when you made those estimates you undoubtedly said: "The present price of steel is so much."

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Now, there have been, I think, three different cuts in the price of steel since November—

Gen. TAYLOR. Well, I would suggest, Mr. Chairman—

Mr. DEMPSEY. And large cuts, too—

Gen. TAYLOR. I would like to suggest this, Mr. Chairman: That you give us the \$250,000, which is the sum of those first three items. Then we will make all of the savings that we possibly can in the construction of those bridges. If it looks as though prices will continue to come down we will delay a short time until they get down to what looks like a reasonable basis.

Mr. DEMPSEY. I think your price is all right now.

Gen. TAYLOR. And then whatever saving we make on the cost of the construction of the bridges can then be applied to other work; it will be available for other work on the canal; it will simply reduce your future appropriations; that is all.

Mr. DEMPSEY. What I am trying to get at here, General, is this: I am trying in a legitimate way to lessen this estimate if I can. Here is your situation: The proposed estimate is, I fear, out of all proportion, considering what the size of this bill will be to the importance of the project.

Gen. TAYLOR. If you measure the importance of the project by the commerce that is actually existing there is not any question about it; you would not be justified in making an appropriation of \$50,000, much less than the \$460,000; but it is a case where there is no larger commerce simply because the conditions are such that that commerce can not develop. For instance, it is the case of having a bridge across the river; if you do not have a bridge all the

way across the river you can not have much commerce over your bridge, but you may have a very large and important commerce over your bridge as soon as it is completed.

Here is a case where the commerce is subjected to tolls and it must pass through very indifferent waterways, and even under those circumstances there is a very good commerce, not as shown in tons there, but I know from what I saw personally that it is a very much used and highly appreciated waterway.

Mr. DEMPSEY. Well, here is the situation, Mr. Small, as it appeals to me in regard to this project: We are not appropriating for the larger projects, which really do carry and will carry the commerce of the country, proportionately anything like the amount suggested here—I mean you take any of the large harbors. And, after all, it is a practical question, and when you go on the floor men are going to draw those comparisons; and in order to secure the reasonable approval—I am not asking about political approval, but the logical approval of the House—you have got to keep that very practical question in mind all the time, it seems to me.

Gen. TAYLOR. Then, I wish to suggest this, Mr. Chairman. If you wish to cut it still further, to cut it down, say, to \$200,000, assume that we can save—

Mr. DEMPSEY. You mean the whole three items?

Gen. TAYLOR. Yes, sir; let us assume that we can save 20 per cent of the cost of those first three items.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. That would be—the sum of those first three items is about \$250,000.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. Suppose we can save 20 per cent of that; that would reduce the cost of those first three items to \$200,000. That is less than half of the estimate, you see.

Mr. SMALL. And that would enable you probably to construct those three bridges?

Gen. TAYLOR. We hope that we can construct all three bridges with it. We would do the best we could. The larger bridge, of course, is the more difficult problem and will take longer to construct; and if we could not get all three of them constructed we could certainly get that one constructed.

Mr. SMALL. And in the meantime, having secured the Hansen Canal, you can construct these three bridges instead of actually working on the construction of the waterway.

Mr. DEMPSEY. General, we have got our memorandum on these two suggestions of Gen. Beach, do you not think the more orderly way would be to go back—

Mr. SMALL. If you will let me suggest, we have our line of thought in these connecting waterways here in this group. Let me see, there are four of them.

Mr. DEMPSEY. Yes.

Mr. SMALL. And they are all connected; we have our minds on them; I think you will find it practicable to take up the first one of them there to Bayou Teche.

## MISSISSIPPI RIVER TO BAYOU TECHE SECTION.

Mr. DEMPSEY. The next is the intracoastal waterway, Mississippi River to Bayou Teche. That is a distance of 104 miles.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And there are 71 miles of it, I see stated there in the middle of the second line on page 985 that are naturally navigable; and the remainder consists of artificial canals.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The project is for a 5-foot waterway with a 40-foot width. It was adopted in 1919. Mr. Small, right here before we go along, this is purely for an artificial waterway and see we adopted the project that embraced the improvement of the natural waterway and the construction of the artificial waterway.

Mr. SMALL. And the probable purchase of an existing privately owned canal.

Mr. DEMPSEY. Is the jurisdiction of the Rivers and Harbors Committee clear over the construction of a canal where it is used in connection with a natural waterway?

Mr. SMALL. Yes.

Mr. DEMPSEY. There is no doubt about that?

Mr. SMALL. There is no doubt about it; it is a question of navigation.

Mr. DEMPSEY. I see, General, in connection with that matter, at the top of 986, that you do hold the artificial portion and that the local interests are securing the right of way but that apparently, at the time you went to press it had not been secured. Do you know anything further about that now?

Gen. TAYLOR. It has not up to the present time. There has been difficulty with one of the owners of the land in acquiring title. There has recently been authorized a slight change of route which will avoid his land, and I think there has been no difficulty in securing title along the changed route. I expect that will be available very soon.

The local interests down there are very active in obtaining those rights, and I will further say that we find it of great advantage in all projects such as this to insert a condition that the rights of way shall be obtained by local interests that are in touch with the people living on the land, because they know the proper price to pay for it, and they have the proper lawyers to take up and prosecute the work much more actively and also economically than we could; and they get it for very much less money and in much less time than we could get it. If the owners of the land thought the United States was paying for it directly it would be very much more valuable than it is if local interests are buying it, and they are paying their share of the taxes which are assessed to pay for it. I think I can settle that very briefly, Mr. Chairman, by stating that all of the remarks which have been made about the other sections, the desirability, the necessity for them, the uses which will be made of them, apply equally to this section, that if the cut is to be made proportional it ought to be about the same on this as it is on the other sections.

Mr. DEMPSEY. That would make that about \$50,000.

Gen. TAYLOR. Yes, sir.

## MERMENTAU RIVER TO SABINE RIVER SECTION.

Mr. DEMPSEY. What about the third item, the intracoastal waterway from Mermentau to Sabine?

Gen. TAYLOR. That is in pretty much the same condition as the other sections, except the work has progressed a little further. As a matter of fact, the canal was completed through from the Mermentau to the Sabine, a canal 5 feet by 40. Subsequently Congress authorized its enlargement and deepening. Local interests were to put up half of the money, and a very peculiar thing happened——

Mr. DEMPSEY. Where do you find that, General?

Gen. TAYLOR. That is on page 994.

Mr. DEMPSEY. 993?

Gen. TAYLOR. Beginning on 993.

Mr. DEMPSEY. I mean, where do you find your statements about the local interests contributing; about local cooperation?

Gen. TAYLOR. At the top of page 996.

Mr. DEMPSEY. Now, General, I see the details of the estimates are at the top of page 997.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. For a 5-foot channel, 40 feet wide, in the Mermentau-Calcasieu section, \$168,000; and to purchase the necessary plant and resume work on the Calcasieu-Sabine section, \$444,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, this is very largely a new project, is it not, all the way through?

Gen. TAYLOR. Yes, sir; the Mermentau-Calcasieu section is new. The part from Calcasieu to Sabine has been dredged already and is now being enlarged. I would suggest that if a cut is to be made that that item of \$444,000 be left out, reducing that to \$168,000. I am suggesting that because we are not quite ready to go ahead with the purchase of that plant yet. It is going to be an economy in the long run, but we want to study the question a little more and prepare our plans and specifications, and that will take a little time, and it really will cause less delay by going without that item than anything else.

## BAYOU VERMILION AND CALCASIEU RIVER AND PASS, LA.

Mr. DEMPSEY. There are two items there, one of \$10,000 and the other of \$15,000. Tell us about them in your own way, as shortly as you can.

Gen. TAYLOR. Both of those improvements are small sections, really feeders of the intracoastal waterway. As you will see, both of them will have considerable commerce, particularly the Calcasieu River which has a large commerce. That really is a feeder to the intracoastal canal, or will be when the section which we were discussing before there, the section from the Calcasieu to the Sabine is finished. A large part of that commerce which now goes out of the Calcasieu River will go over that section from the Calcasieu to the Sabine and out through the Sabine Pass. I think it will be a very large commerce.

Mr. DEMPSEY. What would you suggest as to the amounts and the class of the amounts in these two items?

Gen. TAYLOR. I should say that some money for maintenance is essential; take the two of them I think probably they could be cut to \$15,000 instead of a total of \$25,000.

#### REMOVAL OF THE WATER HYACINTH.

There is one more item, the water hyacinth, which covers all the Gulf States. It is put in here under "Water hyacinth," but it covers all the States—Florida, Alabama, Mississippi, Louisiana, and Texas. I do not know of any small appropriation that is as beneficial as this one.

Mr. DEMPSEY. Well, you have \$30,000 on hand, General. What do you say you can get along with considering that?

Gen. TAYLOR. The \$35,000 is the least that we can possibly get along with. We have fallen behind with that work in the last year and it is very essential that we should have that much.

The CHAIRMAN. The committee stands adjourned until 10.30 o'clock to-morrow morning.

---

SATURDAY, JANUARY 15, 1921.

#### APALACHICOLA BAY, FLA.

Mr. DEMPSEY. The next is a group of items beginning with Carrabelle Bar and ending with St. Andrews Bay, Fla., and those are grouped together. There are seven for which appropriations are asked.

Now, General, can you describe those in a general way?

Gen. TAYLOR. Yes, sir. The first item for which the appropriation is asked is Apalachicola Bay, Fla. It is a harbor situated on the west coast of Florida, on the coast of the western projection of Florida. It is in very nearly the central part of the western projection of Florida. Apalachicola River empties into it. It is a fairly good small harbor, with a not very large, but rather important tonnage.

Mr. DEMPSEY. It is 150 feet wide, 18 feet deep in the harbor, then a channel across the bar of the river 100 feet wide, by 10 feet deep.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, you propose—

Gen. TAYLOR. Simply to maintain that channel.

Mr. DEMPSEY. Is the project complete? The 10-foot channel I see is complete, and the 18-foot channel is 20 per cent completed, I see.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Well, now, what do you say as to that?

Gen. TAYLOR. I think that it is necessary. That money should be provided for the maintenance of those channels.

Mr. DEMPSEY. You have only \$2,500 on hand in cash and \$7,000 in outstanding contracts?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Can that estimate of \$17,000 for maintenance be reduced without serious injury?

Gen. TAYLOR. I do not think it can be reduced and the channel maintained. It is a channel that shoals rather rapidly.

Mr. DEMPSEY. Commerce is maintained about stationary there?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Have you anything to show about the size of vessels that visit there, General? I see that your channels are completed for certain depths. That is the reason I am asking.

Gen. TAYLOR. Yes, sir; I think I have. There were 200 vessels that entered the harbor of Apalachicola, 203 vessels having a total net registered tonnage of 2,855 tons, or an average of a little over 14 tons. The largest appear to be 12 barges of 1,200 tons. That is an average of 100 tons so they are all small vessels.

Mr. DEMPSEY. With an average depth of about what?

Gen. TAYLOR. It does not give the draft. Those are all small vessels.

Mr. DEMPSEY. You have been spending about \$15,000 or \$16,000 a year?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And you have \$2,500 on hand. Do you not think that you could cut that to \$12,500.

Gen. TAYLOR. It might be cut to that.

#### APALACHICOLA RIVER, FLA.

Mr. DEMPSEY. The next item is \$7,000 for maintenance and \$10,000 for further improvement of Apalachicola River.

Gen. TAYLOR. And the Cut-off, Lee Slough, and Lower Chipola River.

Mr. DEMPSEY. Tell us what you have to say about that.

Gen. TAYLOR. I think that is a very important project, even more important than the other. The tonnage, you will notice, is 85,000 tons. That is a large tonnage.

Mr. DEMPSEY. Let us see where that is. What is your \$10,000 for, General?

Gen. TAYLOR. The \$10,000 is for dredging approximately 40,000 cubic yards of sand and gravel at Blountstown Bar, which will complete the project.

Mr. DEMPSEY. That Blountstown Bar is about half way up the river, I see. You have on hand there \$8,500. Now your total is \$17,000. Taking into account that \$8,500, what do you think can be done with that?

Gen. TAYLOR. The maintenance item should not be reduced. The improvement item—if you reduce at all, it may be omitted, because that is a job we would want to do all at one time.

#### UPPER CHIPOLA RIVER.

Mr. DEMPSEY. Tell us about the Upper Chipola.

Gen. TAYLOR. That really is a continuation of the preceding project.

Mr. DEMPSEY. Those two together make up the Apalachicola River project?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now that has a good deal smaller tonnage?



Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You have not anything on hand?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. What is the \$8,000 to be used for?

Gen. TAYLOR. To clear the channel of snags and to construct training walls to prevent the flow of water from the channel through the adjacent swamp in several places. It is really a maintenance proposition, to prevent the spreading out of the water over the flat.

Mr. DEMPSEY. I see that the commerce is growing—grain, feed, logs, lumber, crossties, and miscellaneous merchandise. That constitutes 2,500 tons. The rest is made up of steamers drawing 3 feet depth. Well, what do you say as to that, General?

Gen. TAYLOR. I think that ought to be given for maintenance.

#### FLINT RIVER, GA.

Mr. DEMPSEY. The next is Flint River, Ga. What do you say as to that?

Gen. TAYLOR. The principal item there, \$30,000, is for the construction of a new hull for one of the pieces of floating plant. The boat I know is old and rotten and has reached a stage where we can no longer use her economically in her present condition. It is certainly something that should be done in the interest of economy. The balance of \$5,000 is for maintenance. The \$30,000 is put under the head of further improvement. It really is more in the nature of maintenance, because that boat is a small dredge which is used in maintenance.

Mr. DEMPSEY. Well, now, will that dredge be used solely on this waterway?

Gen. TAYLOR. No; it is used on various waterways in the district. Used all over that district.

Mr. DEMPSEY. Well, your \$5,000 you think is necessary for maintenance, and the \$30,000 is just a question of whether you are going—

Gen. TAYLOR. To keep the boat going at all.

Mr. DEMPSEY. Whether it will be rebuilt?

Gen. TAYLOR. Yes, sir; and if we do not rebuild her we will have to lay her up. She has reached a condition where without repair she can not be kept in service.

#### CHATTAHOOCHEE RIVER, GA. AND ALA.

Mr. DEMPSEY. Your next item is \$100,000 for the Chattahoochee River, Ga. and Ala., for maintenance \$100,000, balance on hand \$13,000, and \$11,000 outstanding contracts, making about \$25,000. Tell us what there is about that?

Gen. TAYLOR. That will be used as a maintenance item. A considerable part of that is for repair of plant, which has reached a very dilapidated condition; it is in a very rotten condition, I should say.

Mr. DEMPSEY. That is a 12-foot project?

Gen. TAYLOR. Yes, sir; about 100 feet wide.

Mr. DEMPSEY. About 100 feet wide?

Gen. TAYLOR. That has a very modest commerce, about 50,000 tons.

Mr. DEMPSEY. It is 164 miles in length?

Gen. TAYLOR. Nearly all of that you see was carried by boat, very little logs, only 736 tons; 39,832 tons were carried by the boats and barges, valued at \$4,866,993.

Mr. DEMPSEY. \$15,000 for snagging, \$13,000 for dredging, \$40,000 for a new steel hull for a towboat, \$12,000 for repairs to the dredge, and \$8,000 for repairs to barges and other boats; \$4,000 for care of idle plant and \$8,000 for overhead expenses and contingencies. Do you not think they could get along with building up their plant there. They seem to want to overhaul everything they have?

Gen. TAYLOR. If you will read the next paragraph, or a continuation of that same paragraph, you will see that it does need overhauling.

Mr. DEMPSEY. What do you think about that, Mr. Small? You see, they want \$40,000 for the construction of a new steel hull for the U. S. towboat *Columbus*, \$12,000 for repairs to the dredge, \$8,000 for repair to barges, etc., \$4,000 for care of idle plant and \$8,000 for overhead expenses and contingencies.

Mr. SMALL. You can make out a very good case——

Gen. TAYLOR. I think there is no district in the country where the plant has deteriorated to the extent that it has there. They have been going along for several years past on a hand-to-mouth policy and just barely keeping the plant going. I had a man down from my office inspecting the plant and he finds that the whole plant practically has gone to pieces. They have not had money enough to keep it up. They have made such repairs as the money would permit them to do, just patching here and there, until there is not much left to patch. It is unfortunate that it has gotten into that condition, but it has been due to lack of sufficient money to keep it in proper condition, and it is an accumulation, and an example of what will happen in other places if we do not have the money to keep the plant up.

Mr. SMALL. They seem to make out a very strong case, but are there not some of the items entering into the cost that might be reduced?

Gen. TAYLOR. One item for \$15,000 for snagging.

Mr. DEMPSEY. Another \$13,000 for dredging.

Gen. TAYLOR. \$28,000.

Mr. DEMPSEY. They say here below that as these repairs will consume the entire working year of 1921, they estimate for nothing but snagging——

Gen. TAYLOR. And a small amount of dredging. In other words it comes down almost to the case of making repairs to the plant without doing any work on the project. It will take the better part of the year to get the plant in proper shape, so that if it is granted now it will be next year before there will be any real work done.

Mr. DEMPSEY. Taking all the project into consideration, what is your judgment as to what should be granted?

Gen. TAYLOR. I think they ought to have it.

Mr. DEMPSEY. What do you think about that, Mr. Small?

Mr. SMALL. Mr. Chairman, it is an embarrassing situation for the subcommittee. The committee feels constrained to economize and yet quite a strong case is presented there. It is difficult for me to combat the estimate of \$100,000, yet I realize that we ought to reduce it if possible.

Mr. DEMPSEY. Well, I see what there is to it. We have a memorandum of it. We will have to take it up.

CHANNEL FROM APALACHICOLA RIVER TO ST. ANDREWS BAY, FLA.

Mr. DEMPSEY. The next item, channel from Apalachicola River to St. Andrews Bay, Fla. This has a nominal amount of tonnage?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Of a nominal value. Is not that the kind of an item that should be cut out at a time like this?

Gen. TAYLOR. It will be less harmful to the interests of the country generally to omit that than it would some others.

ST. ANDREWS BAY, FLA.

Mr. DEMPSEY. Your next item is the St. Andrews Bay, Fla., page 848. What do you say about that project?

Gen. TAYLOR. That is an important project. There is considerable commerce through the channel. The entrance into the harbor shoals rather rapidly, due to a shoal working in from the east side of the harbor.

Mr. DEMPSEY. I see your proposed operations are dredging with one dredge, restoring the project dimensions at a cost of \$64,000, erecting plant, \$27,360, and overhead, \$5,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Timber products are 72 per cent of the total commerce.

Gen. TAYLOR. Yes; that is, the lumber that is shipped out of the harbor.

Mr. DEMPSEY. Thirteen thousand tons, they say, requiring the full project depth.

Gen. TAYLOR. Now, we had on hand the 1st of December \$4,000 only.

Mr. DEMPSEY. Under "Condition at the end of the fiscal year" the controlling depth at the outer bar was something over 21 feet?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. With a width of 200 feet, and the inner portion has the project depth and width except at the eastern extremity of Hurricane Island, where the channel has been narrowed and thence eastward. They are in pretty good shape.

Gen. TAYLOR. They happened to be just at the end of the year, because there had been some redredging that had just been finished. You see dredging operations were carried on there February 1 to May 7, 1920, and from May 26 to the end of the fiscal year, so that we have been at work for about six months on that. Shortly after that time the dredge was taken off and sent elsewhere, and the experience of the harbor is that it needs redredging about once a year. So that by next spring, before the end of the next fiscal year, we will certainly need money, probably this fall. Some time we will need to do additional work.

Mr. DEMPSEY. But taking into account that this harbor, as harbors go, is in as good condition as any——

Gen. TAYLOR. It was in good condition because of the maintenance dredging which was completed at the end of the fiscal year. It was in the best condition that it had been in for two or three years. It is not in as good condition to-day as it was on the 30th of June.

Mr. DEMPSEY. We think it may not be.

Gen. TAYLOR. I know from past experience. I should be willing to lay long odds that it is not.

Mr. DEMPSEY. But taking into account all that you and I know, not what we guess, do you not think that we can get along very comfortably without this appropriation?

Gen. TAYLOR. It might be cut down and serve the purpose.

Mr. DEMPSEY. What would you say about \$30,000?

Gen. TAYLOR. I should not cut it below \$50,000. You see the expenditures last year were \$55,000. That only provided dredging for about five months.

Mr. DEMPSEY. But see what splendid results you got. I am in hopes that that may be the condition for some time.

Gen. TAYLOR. I think \$50,000 spent this year or the early part of next year, two years from the time the dredging was commenced before, may probably restore the channel to reasonably near project dimensions, but I do not think you can go until July, 1922, without some work.

#### CHOCTAWHATCHEE RIVER, FLA. AND ALA.

Mr. DEMPSEY. What about the Choctawhatchee River, Fla. and Ala.? There is only one of the whole group that seems to be doing much business, and that is Pensacola Harbor, and it is very important.

Gen. TAYLOR. There is no question about that one at all. It is the most important harbor in that section of the Gulf. It is used by the Navy. They have a large harbor there. I think the full amount of the estimate should be given. The other items in the group are all small items. There is a fair amount of commerce as you will notice.

Mr. DEMPSEY. Except the Holmes River?

Gen. TAYLOR. Except the Holmes River.

Mr. DEMPSEY. Which is nominal?

Gen. TAYLOR. Which is nominal, and for which the appropriation is small.

Mr. DEMPSEY. Suppose we grant \$10,000 for the four items, and then come down to Pensacola Harbor.

Gen. TAYLOR. It would crowd us a little in order to maintain the work, to do the maintenance work.

Mr. DEMPSEY. But we will be crowded when we get into the House on getting \$10,000. Suppose we got \$10,000 for the four items. What do you say about that, Mr. Small?

Mr. SMALL. I would like very much if possible to reduce it to that.

Mr. DEMPSEY. Suppose we put it at that.

## PENSACOLA HARBOR, FLA.

Mr. DEMPSEY. Now we come to Pensacola. We ought to have a justification and facts for the record. Tell us what you know of that.

Gen. TAYLOR. It is the important harbor on the west coast of Florida. It is used very largely by the Navy and is a large and important commercial port.

Mr. DEMPSEY. Then it is important both to commerce and to the Navy?

Mr. DAVIS. What condition is it in now?

Mr. DEMPSEY. "Condition at the end of the fiscal year," the project, which was for a 30-foot channel, 500 feet wide, was completed in 1915.

Gen. TAYLOR. At the end of the year the channel had shoaled so that the controlling depth of the center range of the channel was 27 feet at mean low water, on the eastern range 26 feet——

Mr. SMALL. I doubt the wisdom of attempting to reduce that very much, it is such an important harbor.

Mr. DEMPSEY. Well, the depth varies from 29½ down to 26 feet, General?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Possibly you might get along with \$50,000?

Gen. TAYLOR. \$50,000 would probably provide for the necessary dredging. The balance that is needed is in repairs to the plant, and care for the plant, and some other maintenance work, rebuilding the south groin at Fort McRee, and additional expenses.

Mr. DEMPSEY. There is a navy yard in the harbor?

Gen. TAYLOR. There is a navy yard.

Mr. DEMPSEY. Suppose we put that in at \$50,000.

## ALABAMA RIVER, ALA.

Mr. DEMPSEY. Now, your next item is Alabama River, Ala. \$32,000 for maintenance, \$28,000 for further improvements, and \$23,000 on hand, \$7,200 in outstanding contracts, making \$30,000 on hand.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you say as to that?

Gen. TAYLOR. It is rather a long channel to maintain. The project covers a distance of 322 miles.

Mr. DEMPSEY. A 4-foot depth?

Gen. TAYLOR. A 4-foot depth; yes, sir.

Mr. DEMPSEY. The project is 85 per cent completed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The controlling depth at the end of the fiscal year is about 3 feet at the Evans Upper Bar, 130 miles above the mouth. At the end of the fiscal year the work was in fair condition. Many of the pile and brush dikes and spur jetties will have to be replaced or renewed, and maintenance dredging will have to be carried on in several places.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You propose to snag at a cost of \$12,000, repair of plant \$4,000, care of idle plant \$4,700, overhead expenses and contingencies \$3,300.

Gen. TAYLOR. That is using up the money that is on hand. What is to be done with the money is stated in the next paragraph.

Mr. DEMPSEY. Repairs to jetties, \$40,000; snagging, \$14,000; completion of survey, \$3,000; care of plant, repair, overhead, and contingencies \$13,000.

Gen. TAYLOR. I would suggest that that be cut by the amount of \$20,000. That would provide for half of the work only which is to be done and the repairs to the jetties and will provide for the snagging and other small maintenance work.

Mr. DAVIS. Cut both items?

Gen. TAYLOR. Cut the total of \$70,000; cut out the item of \$28,000 for further improvement, leaving \$42,000 for maintenance.

Mr. DEMPSEY. All right. Any suggestions, Mr. Small?

Mr. SMALL. No, sir.

#### COOSA RIVER BETWEEN ROME, GA., AND LOCK 4, ALA.

Mr. DEMPSEY. Tell us about the Coosa River between Rome, Ga., and Lock 4, Ala.

Gen. TAYLOR. I think it could be omitted.

Mr. SMALL. Both?

Gen. TAYLOR. Yes, sir. You have a report in your hands recommending the abandonment of that entire project.

#### MOBILE HARBOR, ALA.

(See p. 170.)

Mr. DEMPSEY. The next is Mobile Harbor, Ala. Now, we went over Mobile.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the question now is—I do not think we need to go over that again, do we, Mr. Small?

Mr. SMALL. I do not think so.

Mr. DEMPSEY. Now, the estimate there is \$216,000 for maintenance and \$207,000 for further improvement. The amount on hand is about \$120,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, taking into consideration that that is an important harbor on the Gulf, has a large commerce, and on the other hand, that it has a pretty fair project depth, and that we want to be economical, what do you say as to those items?

Gen. TAYLOR. The maintenance item I think must be allowed unless you are going to seriously interfere with navigation, which already is in existence in the harbor. As much of the improvement item ought to be allowed as you can possibly give.

Mr. DEMPSEY. Suppose we give them \$100,000?

Gen. TAYLOR. That would not be as much as ought to be given, but perhaps as much as is consistent with the other—

Mr. DEMPSEY. What do you say as to that, Mr. Small?

Mr. SMALL. I am satisfied that that port ought to have it all, but in view of the necessities of economizing I can see the reason for the reduction of that important item.

## CHANNEL BETWEEN MOBILE BAY AND MISSISSIPPI SOUND, ALA.

Mr. DEMPSEY. The next is a channel between Mobile Bay and Mississippi Sound, Ala.

Gen. TAYLOR. It is really an intercoastal channel between Mobile Bay and the Mississippi River. It is a channel used by the Mississippi River-Warrior Barge Line interests and other small boats traveling between Mobile Harbor and the Mississippi River.

Mr. DEMPSEY. That is a 10-foot channel 100 feet wide?

Gen. TAYLOR. Yes, sir. It is completed.

Mr. DEMPSEY. Now, your proposed operations are?

Gen. TAYLOR. Simply for maintenance. We have no money on hand at all.

Mr. DEMPSEY. That is, it shoals there a good deal?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. It is quite an important channel.

Mr. DEMPSEY. Well, what shall we do about that?

Gen. TAYLOR. I think it all ought to be allowed.

## PASCAGOULA HARBOR, MISS.

Mr. DEMPSEY. The next item is Pascagoula Harbor, Miss., estimated \$133,500 for maintenance and \$53,500 for further improvements—\$17,000 on hand in cash and \$10,000 in outstanding contracts, making a total of \$77,000.

What do you say about that, General?

Gen. TAYLOR. Unless the money is allowed we will not be able to maintain the channel and certainly not able to carry on any further improvements. That has been a very expensive harbor in which to maintain a channel, and unless it is maintained it becomes necessary for the interests in the harbor to do a considerable lighterage business. As a matter of fact last year lumber was lightered to Gulfport and I think also to Mobile. They have recently been very insistent upon having an allotment for clearing the channel, which has now shoaled, but we had no money which we could allot at the present time. It is, as I think I stated, a very expensive harbor to maintain, considering the amount of commerce that uses it and for the relatively small amount of commerce that uses the deeper channel.

Mr. DEMPSEY. Well do you not think that we had better omit those two items altogether.

Gen. TAYLOR. I do not think we should omit the maintenance item altogether. I think that there should be some maintenance, because if we have no maintenance at all—

Mr. DEMPSEY. Give them \$33,500 and cut out all the rest of the \$53,000. Give them \$33,500.

Gen. TAYLOR. I think that if we do not have more than that the shoaling will increase to an extent where it will interfere even with the light-draft boats.

Mr. DEMPSEY. The difficulty is that you have got a bad project, and you are going to meet that proposition on the floor, and it is going to be difficult to grant anything. I see they had some doubt in mind before. It was granted in a peculiar way. It is for an existing project:

This provides for a through channel of the maximum dimensions that can be secured by the expenditure of \$283,000, but not exceeding a depth of 25 feet and width of 300 feet.

Gen. TAYLOR. There was a great question in our minds as to how much of a channel we could maintain there.

Mr. DEMPSEY. And you had a lot of doubt about it, because that is a very peculiar way of stating a project.

Gen. TAYLOR. They asked for a project of a certain depth, I have forgotten what it was, it was several years ago that that came up—but the Board of Engineers was unwilling to recommend any project of a definite depth. We took into consideration the amount and character of the commerce, and considered what was a fair amount to spend for maintenance of the channel which would be used by that commerce. The recommendation was made accordingly that we should spend a certain amount for maintenance, not to exceed a certain amount for maintenance of the channel, not to exceed 2 feet in depth. In other words, if we maintained a channel 25 feet deep for less than that, we would not have to spend all of it, but in no case should more than the stated amount be spent. It has been found that we can not get anywhere near making a channel 25 feet.

Mr. DEMPSEY. Look at the statement of boats that use that harbor.

Gen. TAYLOR. The drafts are not given, the averages are given. Small craft 1,198, with a net registered tonnage of 84,000. That is about 80 tons each. Sailing vessels, 226 net registered tonnage of 30,447. That is about 150 tons average. Steamers, 415, with a registered tonnage of 71,841, approximately 150 tons per steamer.

Mr. DEMPSEY. They have not a tonnage there that requires the depth. They have a controlling depth of 18½ feet. In Horn Island Pass Channel they have 18½ feet, and in the Mississippi Sound and the Pascagoula River channel they have 12½ feet and 16 feet. They do not need what they have for that kind of traffic. So far as I am concerned I would be in favor of cutting out every cent for this item. That would be my judgment. In the first place it is an unjustifiable item of expense. The expense is altogether out of proportion to the business, and in the next place, for what they do they have all the depth they require, and more than the depth they require. Have you had any recent correspondence with the district engineer, General?

Gen. TAYLOR. We have. The district engineer recently asked for an allotment of \$60,000, but not giving sufficient detail to enable me to act on it, I sent it back for more information and the further statement shows the amount of commerce that they have by lightering, and also that which was not lightered. An estimate can be made of the relative cost of maintenance of the channel per thousand feet of lumber shipped by lighters and by deeper draft vessels with what we pay for our maintenance costs.

Mr. DEMPSEY. Have you any recollection as to what that shows in that respect?

Gen. TAYLOR. It shows that the lighterage was a very much cheaper proposition than making the channel at Government expense.

Mr. DEMPSEY. In other words, the maintaining would cost a good deal more per unit, whatever that unit is, than the transportation of the unit.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I do not see anything, General, in the details about the kind of shipping or anything to indicate that there is any necessity for any greater depth than they have.



Gen. TAYLOR. There is nothing shown in the details to indicate that.

Mr. DEMPSEY. And it would indicate that the character of vessel that they use draws considerable less draft than they already have.

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Now, Mr. Chairman, before you take up the next item, I call attention to the fact that we omitted the Black Warrior and Tombigbee River. There is some work to do in that, I understand.

Mr. DEMPSEY. How about Pascagoula Harbor? What are we going to do with that?

Mr. SMALL. I thought you had decided.

Mr. DEMPSEY. Yes.

#### BLACK WARRIOR RIVER, ALA.

Gen. TAYLOR. The Black Warrior was completed for a 6-foot depth. That proved to be not quite enough for the barges that are operating, and which are now doing a large business. It was found to be very easy to give them 2 feet increase in depth by raising a number of the dams and making certain additions to the locks, and dredging in certain parts. The total cost of that additional improvement was small. The total cost of making the necessary alterations to the dams and locks was small in comparison with the amount of money which had been spent on the river, and was very evidently justified by the great additional benefit to the commerce which will be given by this additional improvement. That was authorized I think two years ago, and has been partly completed. This additional amount of \$80,000 is necessary to complete it.

Mr. DEMPSEY. General, can you not telephone down to your office and send up here this afternoon the details from the necessary branch of operations to show what they have been doing?

Gen. TAYLOR. Do you mean the Mississippi-Warrior Barge Line service?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. Yes; I can find that.

Mr. DEMPSEY. That will give us more of an idea. I would like to know two things: I would like to know what has been carried in Government barges, whether it has been carried at a profit or loss, and if so, how much either way. And secondly and incidentally to that, what they figure in the way of overhead in figuring profit and loss, whether they figure cost of plant, office expenses here, any incidental expenses that a privately operated plant would be forced to pay.

Gen. TAYLOR. I think I can get all of that.

Mr. DEMPSEY. Mr. Small, I suggest that we pass that Black Warrior until we get some details as to what they have been doing this year.

Gen. TAYLOR. But I would like to call attention, Mr. Chairman, to the fact that not only the Government boats, but private boats are also operated on that river; that the Government boats are only part.

Mr. DEMPSEY. You can find what proportion that is from the statement?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I see you have on hand \$269,000 in cash and \$42,000 in outstanding accounts, about \$300,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Which is quite a large amount, even for the traffic that they have, taking that into account. What do you say as to that \$80,000?

Mr. SMALL. While Gen. Taylor is considering that question, the construction of that improvement has involved a considerable expense and we are just now beginning to use it, both through Government operation and private operation, and this appropriation seems to me to be essential there for maintaining the channel in proper condition, and the Government operation is going to continue until Congress adopts some other plan. It seems to me that whatever is actually necessary to make those improvements as contemplated in the annual report ought to be appropriated.

Gen. TAYLOR. I am thoroughly in accord with that, Mr. Small. We have spent nearly \$10,000,000 on this improvement. It is a good improvement, but needs slight additional work to make it a completely successful improvement.

But here is this statement in the annual report, and what I know to be a fact is that part of the money that is on hand is reserved for payment of submerged lands. Of course we must keep on hand sufficient to pay those damages. You see when we raised one of the dams to a height of 63 feet we submerged a considerable amount of territory. We tried to obtain the rights before the dam was built, but a great deal of it was rather wild country, on some of it we found difficulty in obtaining the names of the owners, and others we could not agree upon the amount of damages, and consequently when the dam was finished, that land went under water and we have been settling those cases as rapidly as possible, paying it out as soon as we could make the necessary agreements. But it has dragged along a good deal.

Mr. DAVIS. Is it not likely to be dragged out a good deal more?

Gen. TAYLOR. Yes, sir.

Mr. DAVIS. For several years.

Gen. TAYLOR. It is suggested in the report that payments for this land will continue for five years. I should doubt if we could get it settled up before that time considering what I know of the matter.

Mr. DAVIS. In the mean time the money is lying idle.

Gen. TAYLOR. Yes; we have to hold enough to pay the charges during the year, but I think we would be perfectly safe in using part of the money reserved for the payment of submerged lands, of course with the understanding that we are going to have additional appropriations. We would not want to use it and then come to Congress with a deficit. I stated that we had never come to Congress for a deficiency on river and harbor work, and I do not want to start doing it now.

Mr. DAVIS. You are an anomaly.

Gen. TAYLOR. My statement is correct. We believe that the law is the law and we obey the law or do what we can to do so. If we do not do it it is because of a misinterpretation, and I do not think there is any possibility of misinterpreting the law about deficiencies. We have never done it, but I think we would be quite safe in using part of that money if necessary in the next year, so that I think \$80,000

could probably be omitted, taking all things into consideration, with the amount we have on hand, but I want the committee to back me up when we come in for more money.

Mr. SMALL. Your purpose is to take the amount of money available, the amount of these appropriations which are now available, to do this work, which is contemplated in the estimate of \$80,000.

Gen. TAYLOR. If necessary to do that, but if river conditions are unfavorable for work we might not need to do that, we might not need any more than we have on hand. We ought to have it in order to prosecute the work properly.

#### GULFPORT HARBOR AND SHIP ISLAND PASS.

Mr. DEMPSEY. General, tell us about Gulfport Harbor and Ship Island Pass, Miss.

Gen. TAYLOR. That is an important harbor. It is a large lumber shipping point.

Mr. DEMPSEY. Is not that the end of a railroad there?

Gen. TAYLOR. Yes, sir. That harbor was originally built by a railroad and was taken over by the Government.

Mr. DEMPSEY. It was owned by a Buffalo man, as a matter of fact, Capt. Jones. I see that Gulfport has over twice and a half the tonnage and about three times the value of Pascagoula.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. I see you have on hand \$5,500, \$36,000 in cash, and \$20,000 in outstanding contracts. What is the \$140,000 and what is the \$47,000 proposed to be used for?

Gen. TAYLOR. It will be used for excavating the channel and for increasing it to project dimensions.

Mr. DEMPSEY. Now, let us see. The project is for a channel 26 feet deep, 300 feet wide, to Ship Island Pass, which is how many miles from Gulfport? It seems to be a considerable distance.

Gen. TAYLOR. It is.

Mr. DEMPSEY. Twenty miles, is it not?

Gen. TAYLOR. That is my recollection; yes, sir.

Mr. DEMPSEY. It is more than that if this map is true to scale. That is for 26 feet outside and 23 feet inside, is it not?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. That is an important harbor.

Gen. TAYLOR. I would like to call attention to the commercial statistics on page 3701 for Gulfport Harbor. It shows under tonnage for last year that 107,000 tons of lumber and timber were shipped foreign.

Mr. DEMPSEY. That is shipped to foreign ports?

Gen. TAYLOR. Shipped to foreign ports; yes, sir.

Mr. DEMPSEY. Now, is there anything here to show what they drew? Here we have it, I guess.

Gen. TAYLOR. No; it does not show, but I know that they draw all the water the channel will allow them to draw.

Mr. SMALL. The channel from Ship Island Pass seems to have deteriorated.

Gen. TAYLOR. It does deteriorate quite rapidly. It needs dredging all the time very nearly and I think you will find that there was a

good deal of that lumber that was lightered and loaded into vessels in the lower harbor.

Mr. DEMPSEY. Now, General, you can estimate the tonnage at the bottom of page 3700. There were 321 steamers with a total of, we will say, 200,000 tons. What does that make?

Gen. TAYLOR. That makes about 600 tons average.

Mr. DEMPSEY. And the sailing vessels?

Gen. TAYLOR. That is 700 tons average.

Mr. DEMPSEY. And the smaller craft?

Gen. TAYLOR. Those are only 88 tons.

Mr. DEMPSEY. So it is apparently pretty small craft that uses the harbor.

Gen. TAYLOR. It is necessarily small craft because the depth of the water does not permit the larger craft to come in there.

Mr. DEMPSEY. We can get the depth at page 907. In one section of the channel the depth is 17 feet, in another section 20 feet deep, in another section 17 feet, in another section 23½ feet deep, and in another section 23 feet. It seems to have a depth of from 17 to 23½ feet.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Varying in different portions of the harbor.

Gen. TAYLOR. The controlling depth—that means the least depth—of the Ship Island bar on the 14th of June was 21½ feet, and in the Gulfport Channel and anchorage basin on May 12 was 19 feet.

Mr. DEMPSEY. And that is an increase of 16½ feet over that originally existing?

Gen. TAYLOR. Yes, sir. In other words, that basin is dredged in a locality where there was practically no water at low tide. It has since been dredged up into the land.

Mr. SMALL. The larger expense consists of maintenance of the channel in Ship Island Pass?

Gen. TAYLOR. The harbor channel and the Ship Island Pass shoal very rapidly, and it is necessary to keep a dredge nearly all the time in order to maintain the project depth.

Mr. DEMPSEY. Taking into account the fact that the size of the vessels is what we have discussed, none of them of a thousand tons, and that the depth is 17 to 23 feet, which will permit the use of larger vessels than that, and taking those two things into account, and the financial situation, how small an amount can we grant here which will enable them to do something toward controlling the shoaling?

Gen. TAYLOR. Well, I think that the estimate of \$140,000 for the maintenance is as small as you can grant and permit us to maintain the channel.

Mr. DEMPSEY. Except from the standpoint of maintaining the project depth, I really do not see, from the practical standpoint of the business that they do, although it is a large business and a valuable harbor, any practical necessity.

Gen. TAYLOR. Well, it is not shown in the report. I know as a matter of fact that the vessels that used that have a draft which is as deep as the channel will permit those larger vessels that may carry lumber for foreign business. Those larger vessels that are carrying lumber for foreign business are necessarily deep-draft vessels, because you can not do business in a very small vessel nowadays.

Mr. DEMPSEY. What do you think, taking all the circumstances into consideration, we should grant?

Mr. SMALL. I feel that we should grant the \$140,000 and reduce elsewhere with the less important projects, where the commerce is less important. We might omit the \$47,000 under new improvements and grant the \$140,000. Just ahead of that the appropriation was stricken out altogether.

Mr. DEMPSEY. It is absolutely speculative, is it not, the necessity?

Mr. SMALL. No; you have got to maintain the channel above the anchorage, and the channel through Ship Island Pass, and they have a plant there for its maintenance.

Mr. DEMPSEY. That plant you do not use all the time there? You ship it to other places, do you not, General?

Gen. TAYLOR. We do. We ship it all around that district, but the other appropriations have been so cut down that we will have to tie the plant up unless we have some appropriation for this.

Mr. DEMPSEY. Do you not think that we could omit the \$47,000 and call it \$100,000, and yet, in comparison with the necessity existing for other projects, be doing the proper thing by that harbor?

Mr. DAVIS. Call it \$100,000 altogether?

Mr. DEMPSEY. That is what I meant. The difficulty, you see, is the necessity of any added depth.

Gen. TAYLOR. We have spent on the average for the last five years more than that simply for maintenance.

Mr. DEMPSEY. How much have you spent on the average?

Gen. TAYLOR. For the last five years, 1916 to 1920, the average has been \$99,000—\$65,000 in 1916, \$82,000 in 1917, \$73,000 in 1918, \$122,000 in 1919, and \$154,000 in 1920.

Mr. DEMPSEY. Well, General, as I understand it, if you turn back to page 911, with that fund you have been able to get considerable additional depth, have you not?

Gen. TAYLOR. No; that has all been expended for maintenance. That means that we have just maintained the depth, or have not gained any on the depth we had at the beginning of that period, and you see the expenditure for the last two years have averaged \$138,000, nearly \$139,000. That has been due, those increases in amount have been due to the increased cost of dredging. That is the explanation of it. We have required a dredge to remain in the harbor at work on the project for about the same length of time each year in order to maintain it and the \$150,000, or the \$140,000 as it is estimated in here, is only the amount that is necessary to maintain the harbor in condition during the next year in the condition it was in at the beginning of this year.

Mr. DEMPSEY. Well, that is due to your increased cost?

Gen. TAYLOR. Yes, sir; that is due to the increased cost.

Mr. DEMPSEY. We ought to get back to at least the cost of three years ago. That is coming, and I think that will bring us considerably lower than \$100,000. Suppose we call it that. You see there are only 302,000 tons of shipping. That is giving you a large amount in proportion to the shipping. While it is good shipping, the amount is pretty large in proportion, considering what we will be able to do in the way of a bill.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you say as to that, Mr. Small?

Mr. SMALL. Well, General, do you think you can get along with \$100,000?

Gen. TAYLOR. I suppose we will have to if we can't get any more. I think there will probably be some deterioration of the depth which we now have. I doubt if we can maintain the existing depth. We might possibly be able to do it.

BILOXI HARBOR, WOLF AND JORDAN RIVERS, AND EAST PEARL RIVER,  
MISS.

Mr. DEMPSEY. Well, the next three items, \$10,000 each, for Biloxi Harbor, Wolf and Jordan Rivers, and East Pearl River, Miss. What do you say about those three? The commerce is small, and the amounts on hand are small.

Gen. TAYLOR. Yes, sir. The expenditures for the past several years have been very small. Judging by the expenditures for maintenance in the last five years, the total amount of \$30,000 could probably be reduced \$15,000.

Mr. DEMPSEY. All right.

GALVESTON HARBOR, TEX.

Mr. SMALL. Mr. Briggs is here, Mr. Chairman, and wants to say something with reference to Galveston.

Mr. DEMPSEY. Judge, we will be glad to hear you now. We have an estimate for maintenance of Galveston Harbor of \$350,000—a very large sum, considering the amount of this bill—\$350,000 for maintenance in Galveston Channel and \$500,000 for further improvements. Then \$150,000 for the channel from Galveston Harbor to Texas City, \$60,000 for the channel from Port Bolivar, and \$30,000 for the Houston Ship Channel, \$530,000 for maintenance, and \$1,000,000 for further improvements, a total of \$1,450,000 for maintenance and \$1,500,000 for further improvements, which makes in all \$3,000,000, and the total of this bill is \$57,000,000, which will have to be cut very appreciably, due to the necessities of the present day.

STATEMENT OF HON. CLAY STONE BRIGGS, REPRESENTATIVE IN CONGRESS FROM TEXAS.

Mr. BRIGGS. I appreciate the task before the committee, and of course it is wise to do everything we can to maintain and preserve the great harbors of the country, and particularly those in the Galveston district.

Mr. DEMPSEY. Yes, sir.

Mr. BRIGGS. I presume that Gen. Taylor here will present to you generally the details in connection with the estimates pertaining to the various projects to which you have just made reference.

Mr. DEMPSEY. I think it might be well, Mr. Small, to let Gen. Taylor go through this first while Mr. Briggs is here, and let Mr. Briggs be heard afterwards.

Mr. BRIGGS. That might not be a bad idea.

Mr. DEMPSEY. Do you not think that would be better, Mr. Small?

Mr. SMALL. I do not know whether it would save time or not, but it certainly has its advantages.

Mr. DEMPSEY. We would know what we are talking about. All right; take the first item, top of page 26 of the estimates, \$355,000 for the maintenance of Galveston Harbor, Tex. You have on hand \$154,000 in outstanding contracts and \$12,000 cash. The tonnage is 4,000,000 tons, with a value of \$888,000,000. Tell us about that, if you will.

Gen. TAYLOR. The principal part of that item is for repairs to the jetties. There has been very little repair work on those jetties since they were built, with the result that they have settled in many places so that they are in condition where repairs are quite urgent. Of the estimate of \$355,000, \$294,000 is estimated as the work on the repairs, \$36,000 is for maintenance of the 35-foot channel, and the balance for repairs to the plant.

Mr. SMALL. General, in the river and harbor bill of 1918 Congress authorized an experimental project for maintaining the channel at the entrance to the jetties there by dredging?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Before you get through, will you kindly state the result of that?

Gen. TAYLOR. The result has been very successful. We can maintain a 35-foot channel there at very small expense, provided the jetties are kept up in proper shape. The essential feature of that project is the keeping up of those jetties. If they are allowed to deteriorate, the cost will increase until we could not maintain it at all.

Mr. DEMPSEY. The jetties are indicated on this map, are they not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I believe that is from a point in the ocean to Bolivar Port, on the one side, and a strip of land outside of the city of Galveston, on the other.

Gen. TAYLOR. Galveston Island.

Mr. DEMPSEY. Now, what are those jetties, stone?

Gen. TAYLOR. Stone; yes, sir.

Mr. DEMPSEY. And do you have to pay for the stone?

Gen. TAYLOR. We have to pay a good big price for the stone that is brought in there, brought for a considerable distance, and the expense of quarrying and loading the stone, and the railroad transportation particularly, are very considerable items.

Mr. DEMPSEY. I think, Mr. Small, we had better go to the other items and get them in our minds, and then we will see where we are at.

#### GALVESTON CHANNEL.

The next is Galveston Channel, Tex. Where is the channel?

Gen. TAYLOR. That is the channel along in front of the city. That is the channel up in here [indicating].

Mr. DEMPSEY. Now, how do you propose to spend the \$350,000 for maintenance and the half a million dollars for further improvement? The figures are very large.

Gen. TAYLOR. The \$350,000 is for the maintenance of the channel by dredging. That channel shoals with considerable rapidity, due to the fact that in storms the waters sweep around that in certain directions, and the wind and waves come around and bring in mud.

Mr. DAVIS. What is the length of the channel?

Gen. TAYLOR. About 4 miles. I will say that since this dike—this is the Texas City Channel, leading up here to Texas City, and that is protected by a dike on the east side. Since that dike has been built there has been less shoaling in the Galveston Channel, as that dike prevents that sweep of waves and current coming down across there. That is a very necessary item, the dredging of that channel.

Mr. DEMPSEY. Before we leave that, turn right to the bottom of page 1024, and tell what the condition was there at the end of the fiscal year.

Gen. TAYLOR. "A channel 30 feet deep at mean low tide and 1,200 feet wide has been dredged from Galveston Harbor at Fort Point over the site of the old inner bar to Forty-sixth Street, a distance of 4 miles westward," and that channel, as far as I know, at the end of the year was in fair condition. But that is due to the fact that we have spent a considerable amount of money in dredging that channel during the year.

Mr. DEMPSEY. Well, is that the project depth, 30 feet?

Gen. TAYLOR. That is the project depth; yes, sir.

Mr. DEMPSEY. Now, have you your project depth at the end of the year?

Gen. TAYLOR. Yes; but we have it simply because we have done a lot of dredging during the year.

Mr. DEMPSEY. How much have you used during the last 5 years in keeping that project depth there?

Gen. TAYLOR. We have used, in 1916, \$111,000; in 1917, \$126,000; in 1918, \$112,000; in 1919, \$28,000; and in 1920, \$124,000.

Mr. DEMPSEY. An average of \$80,000 or \$85,000 a year.

Gen. TAYLOR. About \$100,000.

Mr. DEMPSEY. It ran a great deal below one year. I think it would average about \$80,000 or \$85,000 a year.

Gen. TAYLOR. No; it is over \$90,000, it is nearer \$100,000.

Mr. DEMPSEY. Have you ever been in as good condition at the end of any fiscal year as you were at the end of this fiscal year?

Gen. TAYLOR. Yes, sir; better condition.

Mr. DEMPSEY. Not more than the project depth?

Mr. BRIGGS. I notice in the engineer's report of June 30 that the ruling depth in the channel was only 28½ feet as against 30 feet project depth.

Mr. DEMPSEY. It says 30 feet.

Mr. BRIGGS. The project depth was 30 feet, but I think the report of the engineer gives it 28½ feet.

Gen. TAYLOR. On June 30 the ruling depth was about 28½ feet.

Mr. DEMPSEY. Where is that.

Gen. TAYLOR. Top of page 1025. You will find in the paragraph, "Condition at the end of the fiscal year," "a channel 30 feet deep at mean low tide and 1,200 feet wide has been dredged from Galveston Harbor at Fort Point," etc. I think that does not properly belong in that paragraph. I do not think that that was intended to apply to the condition at the end of the year, because that is certainly not consistent with the statement at the end of the paragraph that the ruling depth is 28½ feet.

Mr. DEMPSEY. One or the other is a foot and a half in error.

Gen. TAYLOR. Yes, sir.



Mr. DEMPSEY. And which it is you would have to find out.

Gen. TAYLOR. The statement that it has been dredged means that at some time it has been dredged, but at the end of the year it was a foot and a half short.

Mr. DEMPSEY. In other words, there has been a shoaling every year.

Gen. TAYLOR. Considerable shoaling every year.

Mr. DEMPSEY. Do you not think that that is the ruling depth June 30, 1920?

Gen. TAYLOR. As a matter of fact, that channel has not been maintained at project dimensions for the last two or three years.

Mr. DEMPSEY. Now in view of the average expenditure of \$90,000 for the last five years, and that you have got the project to the project depth—you were probably doing last year about as well as you have done in any year—do you not think that we ought to make that one of the items that we should cut, particularly if we give generous treatment to the first item, ought not this to be an item that should be a cut to the average expenditure?

Gen. TAYLOR. Giving money for one does not help the other a bit. They are for totally different purposes. One is for repair of the jetties and the other for the channel inside.

Mr. DEMPSEY. If I understand you, the repair of the jetties will save on the cost of maintenance.

Gen. TAYLOR. Yes, sir, that saves on the cost of maintenance of the channel from the gulf in to this point. But it does not save on the cost of the maintenance of the channel around here, which is the one under consideration.

Mr. DEMPSEY. But the one that you are talking about now is going to keep this mud from the outside or the inside.

Gen. TAYLOR. Nothing comes from the inside.

Mr. DEMPSEY. But so far as the outside is concerned the repairs of the jetties is going, as I understand you, to help to save shoaling?

Gen. TAYLOR. In the channel between the jetties.

Mr. DEMPSEY. In what places? Now, as I understand you, there has been a dike built to the mouth of the inner harbor in the Texas City Channel, which does save considerable shoaling of this channel between Pelican Spit and the city?

Gen. TAYLOR. That is this channel between those two points.

Mr. DEMPSEY. Now the shoaling can only come from two points, either from the northwest; is that it?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. The inner harbor, or from the other end, the outer end, which would be the eastern end. Now taking into account—suppose we include that item \$350,000, in a generous way, taking into account that the average expenditure has been about \$90,000 a year—and one year it ran as low as \$28,000—and that you pretty nearly have the project depth, do you not think that under the circumstances we ought to cut this item considerably?

Gen. TAYLOR. The item that provides for repairs of jetties does not help the channel in the front of the city a particle. The jetties keep the water which comes in through Galveston city on the ebb tide going straight out and produces a scouring effect and prevents any sediment brought from the inner part of the channel from settling in the channel, but does not prevent the settling of sediment on the

harbor front brought around from the north end. That is where it comes from. If it had not been for that Texas City dike, the maintenance of the channel in front of the city would have been very much more than it is at the present time. If you will permit me to suggest, I would very much prefer to see the item for the repair of the jetties reduced and the money applied to this channel rather than to give the full amount to the repair of the jetties, as necessary as I think that item is. In other words, if you cut it to \$400,000, instead of giving \$300,000 to the jetties and \$100,000 to the channel I would give \$200,000 to the jetties and \$200,000 to the channel.

Mr. DEMPSEY. Just one minute. I am no engineer, but I would like to see if we are right about this. The design of the jetties, so far as maintenance is concerned, is to carry the silt and shoaling outward to sea instead of having it settle in the harbor?

Gen. TAYLOR. Yes, sir; instead of settling in the harbor.

Mr. DEMPSEY. Now, if it carries it out to sea it is not going to stop any more at this channel below Pelican Spit, but would stay out of this in another part.

Gen. TAYLOR. But it does not have any effect on this channel at all, because it only has effect on the material after it gets to that point that is, eastward of a line drawn from Fort Bolivar to Fort Point. For instance, the jetties have no effect on anything to the westward of that line.

Mr. DEMPSEY. That is just the question in my mind. I thought probably they would have.

Gen. TAYLOR. No, they would not have any effect on that. It is merely that we have prevented the water from spreading out after it passes those two points.

Mr. DEMPSEY. All right. The next item is \$500,000 for further improvements on Galveston Channel. What is that for?

Gen. TAYLOR. That is for the filling in, backing up of the sea wall, which has been built from the wall which has been built by the city of Galveston, for the protection of Galveston against floods. In 1900 Galveston had a very severe hurricane, which did very serious damage and caused the loss of life. Immediately after that Galveston undertook to protect itself by the erection of a sea wall, which runs all the way around on the Gulf, and around the east end of the city back to this point [indicating].

Mr. DEMPSEY. Back to the point on the waterway between Pelican Spit and the city?

Gen. TAYLOR. Yes, sir; only back of that channel.

Mr. DEMPSEY. The city undertook all of this?

Gen. TAYLOR. The city undertook all of this; built that wall, filled behind it, and raised the level of the city generally, and spent something over \$5,000,000 in that protection work. That hurricane and the high tides brought the water 14 feet above the ordinary mean Gulf level.

Mr. DEMPSEY. And it swept across the land between Galveston Harbor and the main entrance to the harbor?

Gen. TAYLOR. Yes, sir; and caused great fear that another storm might occur, and the water being more confined by the work which the city had done in the rising tide it would sweep across that neck of land and very seriously damage the channel, even if it did not open a new entrance into the harbor between the city and the present

channel. To avoid anything like that, the Government adopted a project for the continuation of this wall, a continuation of the wall constructed by the city out toward the jetties. It is about 10,300 feet in length, that extension. When the project was adopted it was contemplated that some funds were to be spent about this vicinity.

Mr. DEMPSEY. The northern end of this peninsula?

Gen. TAYLOR. Yes. That wall was to join onto the work done around these forts so that it would practically form an obstruction to the sea flowing over the spit, clear from the city of Galveston to the channel. The construction of those forts has been abandoned, so that the wall ends on the spit at about that point [indicating].

Mr. BRIGGS. There is a gap of 2,860 feet between that and the south jetty.

Gen. TAYLOR. The project for that wall provided for the construction of a concrete retaining wall, backed up by a certain amount of soil. The money has been provided for the construction of the wall itself, but no money has been provided for the backing of it. The law also provided that the city of Galveston should provide for the construction of 3,300 feet of the wall.

Mr. DEMPSEY. The 3,300 feet belongs to the city.

Mr. BRIGGS. The county of Galveston.

Gen. TAYLOR. The county of Galveston provided the funds, and the wall was built in connection with the Government work. That wall is now standing up there without the backing to make it a perfectly secure wall. Just last year, in November, 1919, they had quite a severe hurricane. The wall as constructed came through that hurricane, but a more severe hurricane may happen, and if it should happen it might turn over that wall in the unfinished condition in which it now is. This \$500,000 is for the purpose of providing a filling to go back of that wall, to support the wall which has already been built.

Mr. DEMPSEY. There is something about that that I can not remember, that Mr. Kennedy brought out in the last hearing. Something to the effect that the city was not doing its proportion.

Gen. TAYLOR. They have completed their proportion of the wall, Mr. Chairman, but they have not provided for the filling back of this portion of the wall. Now they are laboring under this difficulty. They say that they will be in very much better condition to go before their people down there with a request for an authorization to spend that money and have a bond issue if it is known that the Government has provided some money for the continuation of the work on this section.

Mr. DEMPSEY. If any part should be done by the Government there should be at least a condition that no part of the money should be expended until the city had bonded itself for this appropriation?

Gen. TAYLOR. You would not accomplish much in protecting the outer part unless the inner part is protected.

Mr. DEMPSEY. In other words, if the wall has disintegrated there, you have got to have your whole wall protected in order to insure protection.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Is there anything more about that, Mr. Small? You are more familiar with that than I am.

Mr. SMALL. I do not think so. I think the General has presented the entire case.

Mr. DEMPSEY. General, your estimate, of course, is made on the prevailing high prices?

Gen. TAYLOR. No, sir; that is only part of the money that is necessary to complete it. That \$500,000 will not complete it even on the prices estimated originally.

Mr. DEMPSEY. Now, General, here is the question that appears to be in the mind of Chairman Kennedy, that is, whether it would not have been a great deal cheaper to have dredged this whole thing rather than to have built this wall?

Gen. TAYLOR. You mean to redredge the channel?

Mr. DEMPSEY. No; he says here:

With the dredging facilities you have at the present time, it seems to me you could dredge it out at a very nominal cost, when you are making a permanent improvement at a cost of \$2,400,000.

Gen. TAYLOR. It is true that we could dredge this channel out if too much material did not come in, but if you form a channel there, you might block that channel so that it would take months to dredge it out, and you might close up the channel between the jetties, a highly dangerous situation. It was some time, Mr. Chairman, before I was convinced of the necessity of constructing that wall, but I have been studying the problem for a long time, and I have become thoroughly convinced that that wall was a very desirable construction as an insurance against a serious damage, if not destruction, of Galveston channel.

Mr. DEMPSEY. Now, are these two items the items that you want to talk about?

Mr. BRIGGS. Yes, generally.

Mr. DEMPSEY. Do you want to say anything about these other items. I want to cover what you will talk about.

Mr. BRIGGS. I will say something about the Texas City channel, and other projects, including Port Bolivar, which is mentioned in there.

Gen. TAYLOR. You have a large bay in here, and while the ordinary tide is only a foot and a half, in these storm tides in 1900 I think it was nearly 15 feet. I think the whole of Galveston was under water.

Mr. BRIGGS. In 1900, yes.

#### CHANNEL FROM GALVESTON HARBOR TO TEXAS CITY, TEX.

Mr. DEMPSEY. Your estimate on that channel from Galv ston Harbor to Texas City, what is that distance, General?

Gen. TAYLOR. It depends; from Fort Point to Texas City it is approximately 6 or 7 miles.

Mr. DEMPSEY. What are you going to use it for? What is the condition of the channel to-day, and what do you want to do with the \$155,000?

Gen. TAYLOR. The condition is not printed in the report, but I know as a matter of fact that there has been a good deal of shoaling in that channel, and it is not of project dimensions. How much it is short of it I am not certain. All of the money that is asked for is for project dredging.

Mr. DEMPSEY. This is a 30-foot channel, 300 feet wide, 7 miles, top of page 1030.

Gen. TAYLOR. Yes, sir. I see that there is other work to be done besides dredging. It was practically impossible to maintain this channel across the bay on account of the sweep of the wind and waves across the bay before this dike was constructed.

Mr. DEMPSEY. Before we constructed a dike on the north side of the channel?

Gen. TAYLOR. Before we constructed a dike on the north side of the channel. You see, the general depth in the bay is from  $7\frac{1}{2}$  to 8 feet. It has a soft bottom, and as a result, when any storm comes with any wind, that creates a current which stirs up the bottom until the water, carrying a heavy charge of sediment, deposits it into the channel across the bay. In order to protect the channel the dike was constructed, which consists of piling, which is protected from the teredo by means of a clay covering. We dredged the clay out of certain parts of the harbor and deposited it on the north side, sufficient to keep it covered with mud, so as to protect it from the teredo. Otherwise the water of the harbor, being full of teredo, the dike would be destroyed in a short time.

The report states that a considerable portion of the money will be used for restoring the clay covering. You see, during the heavy storm which occurred in 1919, with the high tide, the waves washed down the dirt covering which is there to protect the dike, and it makes it necessary to restore the covering. It is not necessary to do that every year.

#### CHANNEL TO PORT BOLIVAR, TEX.

Mr. DEMPSEY. On page 1031 the work you propose to do is estimated at \$80,000.

Gen. TAYLOR. Dredging.

Mr. DEMPSEY. Maintenance dredging to the project depth, \$80,000, and maintaining the clay covering of the dike and repairs, \$75,000. Now, let us see now, are you interested in the next item, Mr. Briggs?

Mr. BRIGGS. The Port Bolivar; yes, I am interested in this, Port Bolivar and the small items I think refer to some projects in the bayou and the channel.

Mr. DEMPSEY. Where is Port Bolivar, Tex.?

Gen. TAYLOR. It is a little short channel leading up from the main channel to these wharves, with a turning basin in front of it, and the conditions are such that that channel has to be redredged every year. Otherwise it fills up practically to the original depth.

Mr. DEMPSEY. What has been the average expenditure?

Mr. MCGANN. \$21,000.

Mr. DEMPSEY. Now, you are not interested in the next, Houston ship channel. Is there anything more about the last item, Gen. Taylor—Port Bolivar?

Gen. TAYLOR. No, sir; I do not think it necessary to refer to that. The conditions there very plainly show what it is.

Mr. DEMPSEY. Let us see what the condition was at the end of the year. The project is about 90 per cent completed, I see, for a 30-foot channel 200 feet wide.

Gen. TAYLOR. Yes, sir. The condition was 24 feet at the end of the year at mean low tide in the channel and 20 feet in the turning basin, so that there were 10 feet short of the project depth in the turning basin and 6 feet short in the channel.

Mr. DEMPSEY. How large is that turning basin. Oh, I see. It says the turning basin is 1,600 feet long, with an average width of about 750 feet, and 30 feet deep at mean low tide in front of the wharves.

Now, Judge, we should be very glad indeed to hear you.

Mr. BRIGGS. Addressing myself briefly just to some of these items which the General has so ably discussed, I want to make reference first to the Galveston Harbor work, and to state that I am recently advised that the appropriation has become exhausted for the dredging operations in that harbor—that is, the Galveston Harbor. I think that the General explained that part of the proposed appropriation was for the repairs to the jetties and other parts for the maintenance work.

They have a 35-foot approved project, and they have been working on that. The funds have been exhausted. The district engineer informs me that they have taken charge of the work, but that they can not carry on the improvement because the funds have become completely exhausted. I call attention to those facts in connection with the repair of the jetties.

Relative to the repair of the jetties, I made an inspection trip with the district engineer last summer, and I saw the very urgent need of the repairs to the jetties. In some places the rocks need to be built up, and even on the approaches right near the shore. The engineer also noted that.

But during the year on practically all projects a large part of the work was held in abeyance, and the necessity for their improvement has grown greater and greater, because the necessary repairs could not be made under the high existing costs and the lack of facilities during the period we were at war and the period subsequent thereto.

I want to call particular attention to the necessity for an adequate appropriation being made for doing the work.

In this connection I want also to state that the items themselves may sometimes seem large, but are not large when you consider the service that the harbor is rendering the whole Nation. I just took occasion the other day on the floor of the House to call attention to some of the common statistics of the year 1920 as furnished by the Bureau of Foreign and Domestic Commerce. Just the foreign exports alone aggregated \$700,000,000 in 1919, and the tonnage was over 4,000,000 tons. This year it will exceed that. The Bureau of Foreign and Domestic Commerce does not keep the tonnage of vessels going through the harbor. The engineers do. The reports show that last year the value of commerce through that port, coastwise and foreign, for 1919 was \$888,000,000. In 1919 it will go over a billion dollars.

There has been an increase in foreign exports alone of \$200,000,000 and an increase in the shipping and the vessels that go through there. To give you some idea of the vessels, ocean-going vessels, something like between 600 and 700 vessels passed through there. The number has been increased. In other words, through the harbor of Galveston in 1920 over 1,700 ocean-going vessels passed where during the year

1919 something over 1,000 vessels entered and departed from that great harbor, with the immense values of cargoes and ships themselves that passed through, showing the great utilization being made and the great return to that harbor and the great return to the country from the small investment which the Government is making there.

Now, with reference to Galveston Channel, I also feel like the General does, that I hope the committee will allow the estimates, or certainly the more substantial portion of them, for that great work.

The channel itself has shoaled to about 28½ feet. Of course, that affects the ability of the ships there to load down to their load water line and utilize the depth which is in the harbor; that is the present depth of between 30 and 35 feet. The project depth is 35 feet in Galveston Harbor. They have not yet succeeded in getting the 35 feet, but I think they have something over 32½ feet. That is my recollection about that. It therefore shows you that the vessels themselves that enter and clear can not avail themselves of their deepest draft. The inner harbor, the so-called channel, is not kept up to the project depth, and really ought to beyond the project depth; that is, increased to 35 feet.

Gen. TAYLOR. The designations of the harbor and channel are very confusing. The harbor means the channel between the jetties and into the main channel. The Galveston Channel is down in front of the city wharves.

Mr. DEMPSEY. Then you call the part northwest of that spit the inner harbor, I suppose.

Gen. TAYLOR. Southwest. It is north of the city.

Mr. DEMPSEY. You call this the inner harbor [indicating].

Gen. TAYLOR. No, this is the Galveston Channel. This is the harbor [indicating]. Farther down in the Galveston Harbor.

Mr. DEMPSEY. What is this?

Gen. TAYLOR. Galveston Bay.

Mr. BRIGGS. The channel runs right through the bay. It used to be known, at least colloquially, as the Inner Harbor, that is the Galveston Channel, and the outer harbor was known as Galveston Harbor.

Gen. TAYLOR. It would be clearer if it were known that way now, and less confusing.

Mr. BRIGGS. I therefore desire to emphasize the necessity of the project being kept up, because this committee will realize that with only 28½ feet of water that does not mean that vessels drawing 28 feet can use that channel. Each vessel has to have under its keel about 24 inches of water, some more, some less. If the cargo is valuable, they do not like to start out with less than 2 feet under the ship. Therefore, at best, it can mean no more than 26½ feet in the harbor. To handle this commerce, therefore, the ships and the value of the shipping space is extremely lessened because of the inability to load down to the load water line.

Gen. TAYLOR. There is another rather important point in there, and that is that while these depths are given as low water, there is only a tide of a little over a foot, so that practically those are the depths all day. In the harbors of the North Atlantic and Pacific, you take the low water depth and you are able to add five feet or six feet to that in high water, but here they do not have that. They

have only a small range of tide, it is only 1.6 feet outside the storm tides.

Mr. BRIGGS. And I should also like to ask the General if particularly in that locality they have not what are known as "northers," blowing the water out of the channel and harbor to the extent that the depth is lessened two or three feet, and that condition lasts two or three days in the winter months.

Gen. TAYLOR. I made a trip through the intercoastal canals, and I happened to strike one of them and during the week that I was there the water did not get up to low water level.

Mr. DEMPSEY. Two or three feet?

Mr. BRIGGS. Yes.

Mr. TAYLOR. It may be as much as 3 feet below the ordinary mean level.

Mr. BRIGGS. So I also call your attention further to the necessity of keeping this project to at least project depth; that is, the Galveston channel, and I therefore hope the committee will allow the estimate called for for that work. The channel depth should be increased to 35 feet, as recently recommended by the district engineer, so as to meet the needs of commerce.

Mr. SMALL. What about the estimate for the sea wall?

Mr. BRIGGS. I am just coming to that now. I think the report of the engineer for 1919 carried the estimate at \$1,134,000 for filling in behind the Government extension of the sea wall, that is behind the 7,000 feet for which the Government paid. In this year's estimate only \$500,000, only a portion of that has been asked, probably because the engineers felt that they could get along with that as a minimum amount, and the amount which should be raised by the county of Galveston for the fill behind its part of the wall, should be obligated and made available before further appropriation to complete that work is made by Congress.

This filling operation behind that wall is one of grave necessity. I call attention to that because it is especially emphasized in the report submitted by the Chief of Engineers in March last in House document 693, which was a report upon the survey authorized by Congress for the further protection of Galveston Harbor and the channel and the instrumentalities of commerce there. Occasion was taken to state the urgent need of that filling to sustain the wall. I just quote a brief extract from the special report of the engineers submitted in March, 1920.

In the report of the special board of engineers submitted in December, 1919, great emphasis is laid upon the urgency not only of the necessity for an extension of the wall to the south jetty but also for the filling behind the present extension of the wall, without delay.

The board states: "It would seem that it is important to place a substantial fill behind the wall, and it would further state that this may be a matter of some urgency." The board in reaching this conclusion discusses at some length the strains that will be upon the wall in times of storm and the danger to the wall without the filling behind it. (P. 25 H. D. 693, Sec. 54 66th Cong., 2d sess.)

In fact, the special board of 1919 refers to the matter more than once and states in another part of its report that: "The board is of the opinion that it is not safe for the wall to stand without a backing, and it is therefore recommended that a substantial fill be placed behind



this wall throughout its entire length. This filling should be done promptly in order that the wall may not be exposed in an unsupported condition any longer than necessary." (P. 33, H. D. 693, sec. 106.)

They take occasion to state in this connection that the great storms at Galveston, the two in 1900 and 1915, which have been the greatest there, have not been repeated in intensity since the extension of this sea wall was undertaken. In other words the new sea-wall extension has had no such test as it was given in 1915. In 1919 there were some manifestations at Galveston of the storm which struck Corpus Christi. The center of the storm struck there. There was a tide at Galveston of 8.8 feet. At that time there was considerable extension of the sea wall. The intensity of the storm as it appeared in Galveston in 1919 was not comparable with the intensity of the storms either in 1900 or 1915, which have been the great ones which had visited Galveston.

There was one manifestation of the storm there of 1919, which was alluded to by Gen. Taylor, and it was of the greatest significance. It was the cutting of a channel almost through the neck of land to the shore arm of the South Jetty, 2,000 feet wide and varying in depth to 19 feet, as reported by the engineers in House Document 693.

Unlike the storm of 1915, which was of greater intensity at that time, across this neck of land there only was a little channel cut, a very insignificant and very small one, which indeed was scarcely of any appreciable width. The fact was disclosed to the engineers that in the extension of this wall the waters were impounded in such a way that the tidal flow in the remaining open space was greatly intensified, with the result of greatly endangering the shore arm of the South Galveston Jetty and Galveston Channel. The engineers therefore have felt that it was peculiarly and particularly significant, and justified the apprehensions entertained by the board of 1912, which was appointed under act of Congress to make a survey of the eastern end of the island, and which reported the necessity for the extension of this sea wall which had just been completed on the 21st day of December last. That board took occasion to call attention to the danger which threatened the shore arm of the South Jetty, and the danger of destruction which would follow to Galveston Channel and Harbor.

I appreciate, Mr. Chairman, the fact that the committee will be disposed to insist that the appropriation of the \$500,000 required for the filling in behind the present extension of the sea wall would probably be made with the condition that none of that should be utilized or spent until the county of Galveston had raised the portion necessary for filling in behind its part of the wall. Gen. Taylor, I think, called attention to the fact that the appropriation now by the Government of that sum of money would assist materially, even with such a condition, in enabling the county to carry out their arrangements to make the fill behind their portion of the sea wall.

Mr. DEMPSEY. Instead of saying even with the condition you should say by reason of the condition. Don't you think so?

Mr. BRIGGS. However that may be, it is a fact that the necessity for that fill is extremely great. I know there are some in the county of Galveston who appear to feel that the county is not really obligated to put a fill behind the wall. However, the committee of the Congress and the engineers apparently entertain a different idea about that

matter. I am not raising that question again before this committee, or discussing the condition the committee seeks to impose on any appropriation it seeks to make now if that is its feeling about the matter without any further consideration of that question.

The urgency, to my mind, is too great, for I believe that this committee should report in this bill the \$500,000 asked for, even if it stipulates that none of this money should be expended until the county of Galveston raises the necessary amount for the filling in of the portion of the wall constructed by the county; that is, the 3,300 feet. It is true that the wall, 10,300 feet long, was constructed by the Government, but 3,300 feet was paid for by the county. It is all Government construction.

I therefore feel that I must bring to the attention of this committee this fact; and in presenting the necessity for the extension of this sea wall to the junction of the south jetty, it will be recalled, Mr. Chairman, that as I have stated, in 1912, under the provision of the river and harbors act, a special board of engineers was appointed to make a survey of Galveston Harbor with a view to making recommendations to Congress about the advisability of extending the wall, from the terminus of what is known as the county sea wall, eastward.

That board made its survey and reported certain conclusions in which evidently appealed to Congress, because it adopted the project and provided for the construction of 10,300 feet of wall; but provided in that report, however, that the county of Galveston bear the cost of construction of 3,300 feet of the wall, and should also clear the title of the Government to land on which the forts on the eastern end of the island are situated, and that further than that there should be a donation to the Government of 600 acres additional on the eastern end of the island. All the conditions were complied with, and the Government to-day owns a magnificent reservation of 800 acres on the eastern end of Galveston Island. It is one of the finest sites that could be imagined in that location. And it not only has the facilities there for the magnificent reservation, after being filled up as the work on the project in the harbor is carried on, but it has a frontage along that great harbor of the greatest value. If they want to use the site as a base for an Army at any time, or the Marine Corps, as they have done in the past, when trouble was threatened between Mexico and the United States, that reservation will be available to the Government. They have fortifications constructed there. The General advises me that the fortifications for the most part are practically obsolete.

At the same time they are being maintained; they have got guns mounted, and while I do not know that they have mounted any new guns, they have been mounting new guns at the battery at Fort Crockett at Galveston and across the harbor. I do not know what the plans are; I do not imagine any work of abandonment there of the fortifications on the eastern end of the island is contemplated, because that is one of the great points to be fortified against any trouble with any power which might be directed at that great harbor and that great port.

Now I appreciate what the chairman stated a few moments ago, that the committee is only concerned with authorized projects or approved projects. In this connection I want to take occasion to make these observations to the committee.

In the report of 1913 made by the board appointed in 1912, after a survey, such board took occasion to make certain recommendations, and in order to have the advantage and benefit of the expression of the special board recently appointed and which reported here in March last to Congress, I should like to have the privilege of just reading a few extracts from that report.

Mr. Chairman, when the subcommittee arose before the noon recess I was calling attention to the fact that a special board of engineers, appointed under the rivers act of 1912, had reported in 1913, with reference to the extension of this sea wall, the Galveston County sea wall; and in connection with that had made the first suggestion of the threat and danger of a breach in the shore arm of the south jetty, by reason of a channel across this narrow neck of land or flats at Galveston, east of the then constructed sea wall.

And I called attention to the fact that some years before that there had been such a channel through there, and boats had used it; but in recent years, since the jetties were constructed, they had cut off that channel, and therefore removed that danger until these great storms began to be frequent in Galveston, the one in 1900 having blocked the channel for several months.

Now, I am sure the gentlemen of the committee will appreciate what a loss to commerce the blocking of such a channel and harbor for several months means.

The purpose of the engineers, therefore, was, as stated, to devise further means for protecting the channel and harbor; and those means were developed in a general plan submitted, and they recommended an appropriation for the construction of 10,300 feet of wall—3,300 feet of which were to be paid for by the county of Galveston, or the city of Galveston, and the balance by the Government. In the course of that report the engineers made this statement; it is an important one, it seems to me, because it shows just exactly what they had under consideration and the plan:

As matters stand to-day, the batteries at Fort San Jacinto have individually been rendered practically secure from destruction by such a storm as that of 1900, but the reservation as a whole is a low sandy area more or less covered with water and affords no secure or suitable place for a garrison, nor can the necessary line of communications be established between the reservation and the city. As a result, the batteries are looked after by a small detachment of soldiers acting as caretakers, and the proper manning of these batteries and their effective use in defensive operations would be a matter of great difficulty and might prove to be impossible under unfavorable conditions.

That statement should be coupled with the danger or threat to the port from a breach of the shore arm of the south jetty. In that connection they said:

Sooner or later this situation will have to be remedied. The most desirable method, one which will not only protect this narrow part of Galveston Island from being breached by a storm, but will also provide suitable communications to and from Fort San Jacinto and protection for its garrison, would consist in an extension of the Galveston sea wall from its angle at Sixth Street and Broadway to and around the Fort San Jacinto batteries, thence following the south jetty and just inside thereof to the intersection of said jetty with the present southern boundary of the reservation. Such a sea wall with a suitable fill behind it would not only afford all necessary facilities for a garrison at Fort San Jacinto and for its communications, but would render Galveston Harbor safe from obstruction by such a storm as that of 1900. It would also render impossible any flanking of the jetties by the cutting of a channel to the south of them and would permit the erection of wharves along the channel from the eastern end of the present wharves to the boundary line of Fort San Jacinto Reservation. (H. Doc. 1390, 62d Cong., 3d sess., 1913, p. 22.)

The special board of 1919 referred to this, and made the following statement in its report:

A special board was convened in 1912 to consider Galveston Harbor. It reported in 1913. In the report of the board is contained the first recorded mention of the possibility of a breach in the shore arm of the south jetty. This board realized the danger of the ocean's effecting a breach between the south jetty and the city of Galveston proper, and the great danger that would result to the harbor. It recommended an extension of the sea wall to the south jetty and thence around the north and west sides of Fort San Jacinto in order to prevent a breach and to protect the city and harbor, and the fort. The board undoubtedly believed that this wall would be extended in the near future and felt that in building this 10,300 feet the city and navigation interests would be bearing their fair share of the entire work needed. (Sec. 36, p. 21, H. Doc. 693, sec. 71.)

Within the next year the construction of the sea wall extension will be completed. (This report was completed in December, 1919, and reference is to the completion of the extension in the year 1920). The end of this wall will be opposite Battery Hugh Mercer, and there will be left between it and the nearest point of the south jetty a gap 2,860 feet wide. The average level of the ground over this gap is about 3 feet above mean low water, and there is a low sandy foreshore in front of it from 3,000 to 4,000 feet wide. All the batteries and structures at Fort San Jacinto are directly behind this gap. The extension, when completed, will reduce the capacity of the main flood passages by about 15 per cent, for a tidal height of 15 feet, which would probably increase both the velocity and duration of the flood flow. (Pp. 28-29, H. Doc. 693, sec. 72.)

If, in the future, it should be desired to replace them by modern batteries or to install new elements of defense, the reservation, properly protected and filled, will provide ample room for sites and is the only Government reservation which can furnish such additional room. Both Fort Crockett and Fort Travis are now crowded and could be extended only by purchasing additional land, which would require protection by building a sea wall and would also require filling. (Sec. 73, *ibid.*)

If it is desired hereafter to build batteries or other works on this reservation, the construction of 2,860 feet of sea wall now will obviate the necessity of constructing an extensive sea wall around each work. Such individual walls would, in the end, not only cost much more than will a single wall across the gap, but would also intensify the scouring action on the balance of the reservation. By closing this gap now the Government will also secure a reservation nearly 800 acres in extent, protected against serious damage by storms, suitable for wharves, storage, assembly of troops, and other Government purposes. If the wall be completed now, the reservation can be gradually raised by pumping in such material as may be excavated from time to time in the ordinary course of harbor maintenance work in the vicinity.

And then, without taking too much of the time of the committee in referring to this report, I would like to call attention to this further quotation from the report of the Board of Engineers filed in 1920:

The United States Army board of 1912 recognized and emphasized the danger of a breach through the south jetty. The very great scour around the end of the uncompleted wall in 1919, as contrasted with the small effects in the much more severe storm of 1915, shows the danger to which the reservation and the harbor may be exposed if the wall is not extended to a junction with the south jetty. It is thought that possibly the proximity of the "Atlantic's Hole" to the end of the wall may have had a considerable influence in promoting the scouring in the recent storm. Upon the completion of the present project the end of the wall will occupy a somewhat similar position with respect to Bolivar Gorge.

These various considerations point to the advisability and necessity for protecting the reservation at this time. Furthermore, the effect of leaving open the gap between battery Hugh Mercer and the south jetty will be to subject all the batteries at Fort San Jacinto to serious scour and possible obstruction in time of hurricanes, and to subject Galveston channel to the danger of again being blocked by sand carried over from the reservation. In addition, it would appear that there will be the even more serious risk that the south jetty may be breached or flanked and a new entrance channel opened through the San Jacinto Reservation. (Sec. 76.)

In view of the considerations set forth in paragraphs 69 to 76, inclusive, the board is of the opinion that the present sea wall should be extended at the earliest possible moment in a straight line to the south jetty, and that its junction with the south jetty should be strongly protected.

They also call attention, Mr. Chairman, the engineers on the ground, to the fact that the whole plant is there now, the whole equipment, and organized machinery and force, and the work can be constructed at very much less cost if done now. It can be done before the next so-called hurricane season there. The so-called hurricane season has been any time from July to September, and it means and will mean, by providing for the extension now, the greatest saving to the Government, with this plant right there, to continue these operations.

I was struck very forcibly by that in the report recently made by Maj. Adams, the United States district engineer, with reference to the construction of this 10,300 feet of extension. And one of the strangest things to me in that connection was that the cost of the county portion, 3,300 feet of wall of the completed extension, was practically almost as much as the cost of the 7,000 feet of wall for which the Government paid. And the only thing I can attribute that to was the greater experience and ability of the operating force and improved machinery and methods, so that it cost more to construct the first portion than the other, because the wall is all of one type.

Mr. DEMPSEY. Yes; but the prices of labor and of material went up while the work was being done; that is the explanation.

Mr. BRIGGS. No; the county wall was constructed while costs were very much higher. Costs were very much lower at the time the Government's 7,000 feet were constructed; yet the Government's 7,000 feet cost only a little more than what the county had to pay for 3,300 feet. The Government therefore got the benefit of that saving, by reason of the greater experience and the improvements in the methods of construction due to the experience.

Mr. DEMPSEY. I suppose you have some kind of plan on hand for the work?

Gen. TAYLOR. Undoubtedly.

Mr. BRIGGS. Only recently, I understand from the district engineer, they bought new forms of 40-foot length, which were even longer than those used in the original construction of the extension; and because the portable plant is there, they could construct the wall very much more efficiently and economically than heretofore. In the last year they have done splendid work in the building of that wall, and I desire to especially compliment Maj. Adams, the United States district engineer, at Galveston, for the way he has overcome difficulties and expedited the construction.

Mr. DEMPSEY. That is not in the estimate, is it, the item about which you are now talking, for the extension of the sea wall?

Mr. BRIGGS. I appreciate that that is not contained in this estimate. It is in the report filed with Congress last March. I call attention, however, not only to the great urgency of it, but to the fact this very extension was not only considered, but planned for, in this very report of 1913 of the Army engineers, and under that survey authorized by Congress in 1912.

Gen. TAYLOR. Mr. Chairman, this is very similar to the Jamaica Bay case, where there was a project contemplating a certain length of wall; but Congress only authorized a certain portion of that length of wall at the time they adopted the project.

Mr. DEMPSEY. Well, while this is interesting to us, Mr. Briggs, it is nothing of which we have jurisdiction.

Mr. BRIGGS. Mr. Chairman, let me make this observation in this connection, and I do not want to appear persistent with the committee or contentious about a matter that the committee feels has been practically determined. But the very extension just completed was authorized by the Sixty-fourth Congress, in the rivers and harbors bill, an appropriation measure, which carried this provision:

Galveston Channel, Texas: For the improvement by construction of sea-wall extension, in accordance with report of engineers, House Document 1390, Sixty-third Congress, third session, and subject to the conditions herein named, \$200,000.

And then it specified those conditions to which I have made reference, about the county paying a portion of the cost and the land being deeded, etc.

Of course, that was legislation at that time on an appropriation bill. It had been the practice up to that time, I understand, however, to bring forward those items in that way. But they were still subject to points of order.

Mr. SMALL. Well, the Rivers and Harbors Committee, previous to the amendment of the rules, was one of the few committees which had legislative jurisdiction, as well as appropriating jurisdiction.

Mr. BRIGGS. I appreciate that.

Mr. SMALL. But since the amendment of the rules, the appropriating jurisdiction has been taken away and transferred to the Committee on Appropriations, leaving with the Committee on Rivers and Harbors only legislative jurisdiction, and within that jurisdiction is the adoption of new projects.

Mr. BRIGGS. Of course, I rather feel that the matter is one that was certainly considered by the board of 1912, because, as referred to in that report and the one in 1920, it spoke about carrying out the extension at that time.

Congress only appropriated for the construction of the work to the extent of 10,300 feet; and I appreciate that, so far as the 2,860 feet are concerned, some specific appropriation and provision would be required. But it occurred to me that this committee, in view of the urgency of the matter, should carry it forward in this appropriation bill, just as they are doing on several appropriation bills that are being considered by the House; there are items of rather urgent consideration in some of those bills, but not of more urgency than this. Some of them have gone out on points of order and some of them have not. But in view of the urgency of this, and what it means to the Government in a very great saving, I hope it will appeal to the committee at this time to give this item favorable consideration.

Mr. DEMPSEY. The situation is this: You see, with the limiting of the former appropriating committees to a very narrow jurisdiction, you inevitably have a condition where those committees are jealous of that narrowed and narrowing jurisdiction; and I do not think there is any doubt that any attempt on our part to infringe that jurisdiction would be met with very prompt points of order which would be sustained. Do you not think that is true, Mr. Davis?

Mr. DAVIS. Yes; I know it is true.

Mr. BRIGGS. Does not the committee think in any sense that the report, House Document 1390, Sixty-third Congress, third session, which was adopted, which offered a general plan for the protection of

that work, including extension of the wall to the south jetty, but out of which 10,300 feet of sea wall was carved and appropriated for, would furnish this committee a basis, or a reasonable basis, for supporting an appropriation for the extension in this bill?

Mr. DEMPSEY. My understanding is that the department, with the full knowledge of all the facts before it, came to Congress with a plan for the adoption of 10,300 feet; is that not true, Gen. Taylor?

Gen. TAYLOR. Yes; that is their plan in the document.

Mr. BRIGGS. Well, I do not think, so far as the document goes, Mr. Chairman, that it can be argued that the actual construction of anything was provided for in that particular bill other than the 10,300 feet. What I was applying for was the fulfillment of that plan, carrying through the expressed idea of that document and carrying out the plan of the engineers, who, in 1913, seemed to recommend the extension of that jetty. In view of the great importance of this harbor—they are carrying through it a commerce of a billion dollars a year—and other considerations, I thought this committee might be justified in including the item in this bill, even though there may be some question as to the extent of the authority for doing so.

Mr. DEMPSEY. I do not think, Judge Briggs, that the committee would feel justified in taking any chances of infringing the jurisdiction of the Rivers and Harbors Committee. I am afraid it might have a very serious and detrimental effect upon the bill as a whole; do you not think so, Mr. Davis?

Mr. DAVIS. Yes; that has been the result heretofore of any attempt of the kind.

Mr. DEMPSEY. Yes; items in the Indian appropriation bill are going out to-day on points of order that are being made. And I do not think there would be the slightest use of our attempting to provide for any extra wall there.

Mr. SMALL. No; the limitation is so clearly drawn here that it would be rather a reflectuon on the Committee on Rivers and Harbors.

Mr. BRIGGS. Gentlemen, I will just pass these photographs around [exhibiting photographs]. They may be interesting to you as showing the way that the ocean breaks against the wall in severe weather, though conditions in 1919 were nothing like so severe as those of 1900 and 1915. I show these photographs simply as a matter of general interest.

Mr. SMALL. This committee is limited to making appropriations for those projects which have already been adopted and for practical purposes is limited to the estimates, and you are familiar with the estimates which have been submitted?

Mr. BRIGGS. Yes; I am familiar with the estimates.

Now, gentlemen, going on to the next item, the item for Texas City, which was referred to by Gen. Taylor, I hope that adequate provision can be made and will be made with respect to the item for maintenance and the repairs that are absolutely necessary for the dike, in accordance with the recommendations of the engineers.

I want to say that the commerce of Texas City has had the most astonishing development. Its development has relatively been quite in keeping with the development of the port of Galveston. Whereas they had something like 226 ocean-going vessels from there last year, this year they had 526, an increase of 300 vessels, or a million tons.

Mr. SMALL. What railroad or railroads go to Texas City?

Mr. BRIGGS. Texas City has a short junction road, the Texas City Terminal; it is just a short line, which runs 3 or 4 miles and joins with the various trunk lines running into Galveston, the Santa Fe, the Missouri, Kansas & Texas, the International & Great Northern, and the Southern Pacific; they all utilize this junction road.

I call attention to the great commerce because I feel that this committee has as one of its tests of the necessity of appropriations the uses being made of the harbors where it is making investments in this country. And where those uses show that they are very great indeed, and that the commerce is not only being maintained at the rate in the past, but at a greatly increased rate, I think it shows very clearly to the Government that the United States are getting a splendid return upon the investments that are being made.

Mr. DEMPSEY. That is a fine harbor, but I see that while the tonnage increased in 1919 over previous years, the value was not as great then as it was in 1916.

Mr. BRIGGS. Mr. Chairman, the report that you are reading from gives the figures for 1919; I was reciting the figures of 1920.

Mr. DEMPSEY. What do you say the tonnage was in 1920?

Mr. BRIGGS. The tonnage in 1920 was more than a million above that of the previous year.

Gen. TAYLOR. The increase was largely in oil, was it not?

Mr. BRIGGS. The increase was largely in oil; some of it in cotton.

Gen. TAYLOR. But the principal thing there is oil?

Mr. BRIGGS. Yes; oil is the principal thing; and they are building up these lines and shipping a tremendous amount of it coastwise. But there is a tremendous amount of sulphur as well.

Galveston is likewise becoming a great center of the oil business. It is now the world's greatest cotton port. The great oil companies are establishing themselves there now. And just outside this sea wall on the channel front at Galveston are two very large oil companies—I think the Gulf Co. and the Mexican Petroleum Co.

Gen. TAYLOR. But their works are protected by the wall which is already constructed?

Mr. BRIGGS. Yes; except so far as this gap may cause injury.

Gen. TAYLOR. Yes; but they are behind that wall.

Mr. BRIGGS. Yes; they are behind that wall, to the southeast; and, except for that gap in there which allows it to be flanked and increases the tidal velocity, they are protected.

Now, Mr. Chairman, with regard to the channel to Port Bolívar, which is also in my district, the report shows that the turning basin and greater depth of channel is needed considerably. There has not been as much use of the port in the past few years of the war as has taken place recently. Now they are beginning to use it again as a great lumber port. That used to be a great business there, and the companies are beginning to use the port again in that way. And the need for the improvement of the harbor is very great.

There are several other items in my district about which I want to say a few words, all of them small. They relate to channels in Chambers County, Anahuac Channel, and Double Bayou, and bayous in Galveston County. The Clear Creek Channel also an item for maintenance in the estimate. I want to say with respect to these channels in Chambers County, that they are practically the only transportation outlet that Chambers County has. There are no



railroads in that county, except one in the extreme southern portion; and there is no way of getting from many places to the railroad, and these bayous form the only means of transportation. The sections around these bayous raise about 400,000 bags of rice a year. There will be at least 200,000 tons of commerce which will come down each of these bayous, Turtle and Double Bayous. Turtle Bayou and Double Bayou are the only outlets to that section. And Anahuac Channel is the outlet for Turtle Bayou and the Trinity River. For that reason, it seems to me that the estimates are very low; but such as they are, I hope they will be fully allowed by this committee.

It is not too much to say, Mr. Chairman, that nearly all the rice crop in Chambers was threatened with loss to the farmers of that community this year, until the engineers went in there as an emergency proposition and brought those bayous to a depth where they could move out the freight; otherwise their produce was all tied up. They were just doing some work on Double Bayou recently, and some on Turtle Bayou as well, to release the large amount of commerce that comes out of there, including 12,000 tons of lumber from the sawmills in that vicinity, and the ordinary commerce and supplies which use those channels.

If there are any questions which you gentlemen would like to ask, I shall be very glad to answer.

Mr. DEMPSEY. No; I think you have covered the subject very well; and we have been very much interested in what you said, and are glad to have heard you.

Mr. BRIGGS. I am very much obliged to you for this opportunity to be heard.

The other projects in my district, I think, are covered in the engineers' report, and by Gen. Taylor, and I hope that all of them, including those bayous in Galveston County, will be supplied with an adequate appropriation.

#### STATEMENT OF BRIG. GEN. HARRY TAYLOR, ASSISTANT TO CHIEF OF ENGINEERS, UNITED STATES ARMY—Resumed.

Mr. SMALL. Mr. Chairman, while we are on this group and while our minds are on it—Galveston Harbor, Galveston Channel, Texas City Channel, and Port Bolivar Channel—why not take it up and reach some conclusion about it?

Mr. DEMPSEY. I think that would be a good idea.

Mr. SMALL. And then there is one more that Gen. Taylor has discussed, and that is the Houston ship channel. And I want to say that all of the estimates for these five items, including Houston ship channel, ought to be granted if it is possible to grant them; and if there is any reduction I think it ought to be based solely upon the necessity for economy.

Mr. DEMPSEY. Well, I think that is true; and I think they stand in the same class with New York, Philadelphia, Norfolk, and the other great harbors of the country. But we are going to make reductions in all of those.

Mr. DAVIS. We must do so.

Mr. DEMPSEY. Yes, we must; and we may as well face that situation here.

You have four items here, Gen. Taylor. Your first item is for the maintenance of Galveston Harbor, \$355,000. That means the entrance to the harbor?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Between the jetties?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. And for work on the jetties themselves.

Mr. DEMPSEY. The average annual expense for the past five years has been \$25,906.

Gen. TAYLOR. There has been very little expended there for several years past, for the reason that the channel which we had obtained, the 30-foot channel, maintained itself practically, without the necessity for any dredging whatever. We are now working on the authorized project of a 35-foot channel, and we have started on that. In the last year, we spent \$145,000 for new work; that is, increasing the depth from 30 feet to 35 feet.

Mr. DEMPSEY. The \$294,000 is for the jetty?

Gen. TAYLOR. That is for the jetty.

Mr. DEMPSEY. And \$35,000 is to maintain the 35-foot channel?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And \$25,000 for overhead and maintaining plant; that is the way it is made up, is it?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, that \$36,000 and the \$25,000, I suppose, are fixed items?

Gen. TAYLOR. Well, they are necessary; yes, sir.

Mr. DEMPSEY. Those two are fixed items that will have to be allowed. Now, that leaves approximately \$300,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the question is, what part of that \$300,000 you can get along with this year, in repairing the jetty?

Gen. TAYLOR. Well, if we had \$100,000, we could use it advantageously. I do not think we could use much less than that, because we could not make a good contract for it. It would be necessary for a contractor who undertakes that work to install rather a large plant, and for a smaller contract he must, therefore, necessarily charge high unit prices. I think that with \$100,000 available for repairs to the jetties, we could reduce and make a really good start on the repairs to them.

Mr. DEMPSEY. That is deducting \$194,000, then, from \$355,000?

Gen. TAYLOR. Yes; or say, in round numbers, \$200,000, making it \$155,000.

Mr. DEMPSEY. Yes; that would leave \$155,000.

Mr. SMALL. That brings us to the item for Galveston Channel, Mr. Chairman.

Mr. DEMPSEY. In Galveston Channel, you have an item of \$350,000 for maintenance?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. How is that estimate for maintenance made up?

Gen. TAYLOR. That is practically all for restoring the project depth of the channel existing along the Galveston water front. It is estimated to remove 4,500,000 yards.

Mr. DEMPSEY. It is for restoring the depth from 28½ to 30 feet?

Gen. TAYLOR. Yes; restoring and maintaining. It continually fills in more or less, so that there will be more than that foot and a half to which you refer to take out. That is, there was a foot and a half short of the project depth on the 30th of June; since that time, unless there has been work done on it, it has probably increased.

Mr. DEMPSEY. The average expenditures there for the past five years for maintenance have been \$106,116.

Gen. TAYLOR. But the channel has not been maintained, you see.

Mr. DEMPSEY. It falls in at the rate of three-tenths of a foot a year, apparently.

Gen. TAYLOR. Well, it depends altogether upon what the depth was five years ago; it may be that in going to the project depth of 30 feet, we would go to 31 or 32 feet; it is impossible to shave it down exactly; and in order that all parts of it may be 30 feet, we always go a foot or two deeper. So that the chances are that, instead of being a foot and a half that has filled in, it has been 3 feet, or more nearly a foot a year; and if a storm should come along it might show a good deal more than a foot and a half.

Mr. DEMPSEY. Suppose we gave you 50 per cent of what you have averaged in the last five years?

Gen. TAYLOR. I think that would be rather a large cut—too large. We have there two items, \$350,000 for maintenance, and \$500,000 for further improvement. That \$500,000 for further improvement is, as Representative Briggs stated, for filling behind that sea wall.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. Now it is quite evident that the city should make arrangements for filling behind its sections, at the same time that we do our share.

Mr. DEMPSEY. We will not do it otherwise; we have not any right to do it.

Gen. TAYLOR. No; you should not do it otherwise. Now, if you make an appropriation for that, you can then say to the city, "We have the money to start on our section of the wall. Can you give us money to start on your section of the wall?"

Mr. DEMPSEY. Yes; that is what we should do.

Gen. TAYLOR. It will be necessary for them to have a bond issue and raise the money. I doubt very much if they can raise their money, even if they went at it vigorously, as soon as this money becomes available. I doubt if they can get the money inside of a year; and so for this purpose I think \$100,000 will do as well as \$500,000, as urgent as that work is.

Mr. DEMPSEY. Suppose we give you that \$100,000 on this item, and \$200,000 on the other item, for maintenance? That is twice what you have heretofore had.

Gen. TAYLOR. That would be better; but I suggest \$250,000.

Mr. SMALL. I suggest that you make that item \$250,000.

Gen. TAYLOR. Yes; because you are making a very large cut on the other item; so that your cut on the two items combined is considerably more than 50 per cent, which is a cut greater in proportion than you are making on other items in the same class, which are of no greater importance; because I regard both those items as extremely important.

Mr. DEMPSEY. All right. The next is the item of \$155,000 for maintenance of channel from Galveston Harbor to Texas City, Tex. That estimate is to provide maintenance of channel to project depth and width, which is 30 feet, and maintenance and repairs of the 27,000-foot pile dike.

Gen. TAYLOR. Yes, sir; and that I desire to explain.

Mr. DEMPSEY. The project was completed in 1916?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the pile dike in 1915. Now, this is to remove shoaling, I suppose?

Gen. TAYLOR. That is to remove shoaling and to protect the dike.

Mr. DEMPSEY. Yes; it is divided about equally between the two. Now, the average for maintenance for the past years of this project has been \$106,780.

Gen. TAYLOR. But that is another case where we have fallen behind, you see.

Mr. DEMPSEY. Well, suppose we make that \$125,000?

Gen. TAYLOR. If you can not do any better, we will have to get along with that.

Mr. DEMPSEY. What do you say to that, Mr. Small? Apparently this is pretty near the average, and we have got to grant pretty nearly the amount estimated for.

Mr. SMALL. Well, only the financial exigency would justify it.

Mr. DEMPSEY. Well, we will make this item \$125,000.

The next item is for channel to Port Bolivar, Tex., maintenance, \$60,000; that is that short cut up to Port Bolivar.

Gen. TAYLOR. Yes, sir; there has been very little spent on that in the last four or five years, and the channel and turning basin have shoaled very much. The report shows that the channel has shoaled 6 feet and the turning basin about 10 feet.

Mr. DEMPSEY. Yes; the project is for 30 feet; and there is only 24 feet in the channel and 20 in the turning basin. What is the length of that channel?

Gen. TAYLOR. It is a short channel, not much more than half a mile long.

Mr. DEMPSEY. The turning basin is 1,600 feet long and 750 feet wide?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Well, what do you think of allowing \$50,000 on this item?

Gen. TAYLOR. That would be all right; \$50,000 would be considerably more liberal for that item than the amounts allowed for the others.

#### HOUSTON SHIP CHANNEL, TEX.

Mr. DEMPSEY. Now we come to a new item, for further improvement of Houston Ship Channel, Tex., \$1,000,000 and for maintenance, \$530,000. Will you tell us about that, Gen. Taylor?

Gen. TAYLOR. That channel leads from the entrance to Galveston Bay, across Galveston Bay, coming through Galveston channel entrance into this channel, which is dredged across Galveston Bay up to Buffalo Bayou, which begins at this point, and then up Buffalo Bayou to the turning basin, a short distance below the city of Hous-

ton. This was originally dredged to a depth of 25 feet up to the turning basin just below Houston.

The business of that channel developed very rapidly, and the 1919 act adopted a modification of the project, which authorized an increase to 30 feet in depth. We have let contracts which provide for the dredging of the channel all the way across the bay to a depth of 30 feet, with the funds provided by the act of 1919. It is necessary then to continue this dredging on up Buffalo Bayou, increasing the depth from 25 to 30 feet, and that is the item for which the \$1,000,000 is asked.

Mr. DEMPSEY. What is the width and what is the length?

Gen. TAYLOR. The total length of the channel is about 50 miles.

Mr. DEMPSEY. And what is the width?

Gen. TAYLOR. It is 250 feet wide across Galveston Bay, and 150 feet wide in the river section from Morgan Point through San Jacinto River and Buffalo Bayou, with a turning basin at the head 1,000 feet wide and 30 feet deep. You see it is very narrow, only 150 feet wide, in the river section. In fact, it has been only 100 feet wide. And it is surprising the amount of commerce which has developed on such a channel as that. That is one of the great oil centers of the South. I do not remember how many oil refineries are on that channel, but in the neighborhood of a dozen.

Mr. SMALL. Mr. Chairman, this Houston Ship Channel represents one of the most striking instances of civic enterprise and local cooperation in the country. They have on past projects contributed about \$1,500,000, and in addition, have constructed modern water terminals at a very large cost—many hundreds of thousands of dollars. And they have also dredged the channel in the vicinity of the terminal there.

And in adopting this present project, in the act of March 2, 1919, it was provided that they should furnish without cost all necessary easements and dumping grounds, and in addition, contribute \$1,365,000 toward the improvement. And it appears on page 1038 of the engineers' report for 1920 that they have already contributed that amount, and are only awaiting an appropriation by Congress.

Gen. TAYLOR. They have all the money in the bank ready for us; as soon as Congress appropriates money, their money is available.

Mr. SMALL. This has one other distinction, and that is that it is an inland channel; it leads up 50 miles through what were rather shallow and tortuous bayous.

Mr. DAVIS. Up to the city of Houston?

Mr. SMALL. Yes.

Mr. DEMPSEY. How large a city is Houston?

Gen. TAYLOR. Houston in 1900 had 44,633; in 1910, it had 78,800; and in 1920, 138,076.

Mr. SMALL. You will agree that they are very enterprising people in that city?

Gen. TAYLOR. Well, the growth of that city is certainly remarkable, from 44,000 to 138,000 in 20 years. I was in Houston one night about eight months ago, and I believe I saw more automobiles, and a larger percentage of new automobiles there than I ever saw before in a town of equal size—due to oil.

Mr. SMALL. They are entitled to have this appropriation for maintenance and for further improvement both; it is only a question of whether we can afford to give it.

Mr. DEMPSEY. Gen. Taylor, as I understand it, this is part of an entire project?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Part of the project from Galveston Harbor up to the city of Houston?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. It was all adopted as one project?

Gen. TAYLOR. It was all adopted as one project; and there is no question about the propriety of this committee handling the appropriation. And there is this much to be said also, Mr. Chairman, that the money which we are expending on this project for deepening this channel across the bay, for instance, gives them no benefit whatever until the channel is completed all the way through; so that the project having been adopted, it is very important that it should be completed as rapidly as possible. We think that in the work in the bay, already under contract, the contractors are going ahead rapidly with the work.

Mr. DEMPSEY. How much did we appropriate last year?

Mr. SMALL. Not in the last bill; that was in the lump sum.

Gen. TAYLOR. In 1919 the appropriation was \$950,000. We allotted last year, as the allotment book shows, \$391,500.

Mr. DEMPSEY. Are the \$195,000 in cash and the \$780,000 in outstanding contracts on the bay part of the project, or is any of that available for the part beyond, the bayou part?

Gen. TAYLOR. Those contracts are all in the bay part.

Mr. DEMPSEY. So that we have no funds for this part of the project, unless that \$195,000 is available?

Gen. TAYLOR. Yes; we are using that in maintaining the project in the upper section and gaining a little in depth; but we have not enough there to let large contracts, you see.

Mr. DEMPSEY. The \$1,365,000 which the local interests contributed, referred to on page 1038 of the report, and the furnishing of the necessary easements and dumping grounds are toward this part of the project just as much as toward the bay part, are they not?

Gen. TAYLOR. Yes; the whole thing; that applies evenly. Of course, all the easements apply in the upper part of the project, because in the bay there is no question as to the right to dispose of material, because we just dump that out outside the channel.

Mr. DEMPSEY. Yes; I think we understand the situation now. There is one peculiar thing, however. While the commerce is very large, I see that in 1919 it was only one-half what it was in 1918. A large part of the traffic, too, I see is local.

Gen. TAYLOR. Yes; but the commerce is growing very rapidly. I would like to read in that connection a letter which I have from Capt. Allyn, who is the director of the harbor department in the city of Houston, dated September 25, 1920. He says:

Exhibit A attached is a statement of our business (see p. —) and shows what we are now having to do in the preparation of a point for further docks.

In addition to that, they have contributed toward the construction of the channel, they have spent large sums in the construction of fine

concrete terminals, with modern up-to-date equipment, and altogether it is a very good arrangement.

In connection with this Exhibit A that Capt. Allyn refers to, I will just read the destinations of the vessels which he gives, taking them in order:

Tampico, Mexico; Tampico, Mexico; Havre, France; Philadelphia, Pa.; Liverpool, England; Tampico, Mexico; Mobile, Ala.; Philadelphia, Pa.; Philadelphia, Pa.; Manchester, England; Liverpool, England; Italy; Tampico, Mexico; New Orleans, La.; Tampico, Mexico; Liverpool, England; Tampico, Mexico; Kingston, Jamaica; Havre, France; Italy; Tampico, Mexico; Liverpool, England; Havre, France.

So that it shows that their business is pretty well distributed.

Mr. DEMPSEY. Do they maintain any regular service between there and the West Indies?

Gen. TAYLOR. I do not know. He speaks here of the negotiations with the United Fruit Co.; and they said that they are ready to come in as soon as the docks are constructed for them to land there.

Mr. SMALL. Are the present depths a serious menace to commerce?

Gen. TAYLOR. They are a handicap to business in this way: The oil tankers in use on the Gulf now, or running between the various ports of the United States, draw 28 to 30 feet with load. There are a large number of oil refineries on the Houston Channel that would naturally like to use the largest tankers, as they are the most economical vessels in which to carry oil. As the channel has a depth of only 25 feet, they are unable to use the largest and most modern tankers.

Mr. DEMPSEY. The average amount spent for maintenance during the past five years was \$214,430. Have they maintained the project depth during the past five years or not?

Gen. TAYLOR. Not all the time; no, sir.

Mr. DEMPSEY. How much is it shoaled now? What is the present condition of that channel? I suppose your figures will be at the end of last fiscal year.

Gen. TAYLOR. The ruling depth at mean low tide on June 30, 1920, through Galveston Bay was 21.3 feet.

Mr. DEMPSEY. Well, that is another proposition.

Gen. TAYLOR. No, sir; that is part of this project.

Mr. SMALL. That limits the commerce that can go up to Houston.

Mr. DEMPSEY. I understand; but they have outstanding contracts that will take care of that.

Gen. TAYLOR. That is all dredged to 30 feet, of course; but I was answering giving those figures as an answer to your question as to whether it had been maintained or not.

Mr. DEMPSEY. Well, that expenditure for maintenance, then, has to cover the bay as well as the bayous beyond.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You say that is 21.3 feet through Galveston Bay?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Then for 20 miles beyond it is 24 feet?

Gen. TAYLOR. Yes, sir; and then to the turning basin 22 feet. In the turning basin it is 25½ feet. I think the dredging in the turning basin had just been completed at the end of the year; we had just been doing some work in there in the turning basin.

Mr. DEMPSEY. Well, this maintenance fund is really probably to be used for the bayous alone, as the channel through the bay will be taken care of by the dredging to obtain 30 feet. You will get below the 25-foot depth anyway for that part.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What is the entire distance across the bay—first, separately, and, second, what is the entire distance from the north-west end of the bay to the turning basin?

Gen. TAYLOR. Across Galveston Bay is about 25 miles.

Mr. DEMPSEY. Yes; and from there to the turning basin?

Gen. TAYLOR. That is something over 20 miles; it is not quite 30 miles. The whole project is more than 50 miles.

Mr. DEMPSEY. So that half of your distance will be eliminated from your maintenance for this year?

Gen. TAYLOR. Yes; and I will say that that is the most expensive part of the maintenance, across the bay.

Mr. DEMPSEY. Well, half of it, and the most expensive part of it, is eliminated for this year?

Gen. TAYLOR. Yes, sir; so long as those dredges are working under contract.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. But those contracts will be completed before the end of 1922; and it is quite possible that it might be desirable to do some maintenance dredging there after those dredges leave.

Mr. DEMPSEY. Let me follow out this line of thought: You eliminate half, and the most expensive half, of the maintenance—because we are talking now about existing commerce on a 25-foot channel; and when you have dredged to a depth of 30 feet, it is not going to fill in 5 feet during the year; so we will eliminate that.

Gen. TAYLOR. I think that part of the project will fill in more than 5 feet during the year.

Mr. DEMPSEY. Well, for 20 miles it is 24 feet; so we will eliminate that.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. There is a distance of 20 miles that you will have to excavate 1 foot in order to get 25. Now, the distance from Vines Bayou to the turning basin is how far?

Gen. TAYLOR. Well, that can not be very far.

Mr. DEMPSEY. Well, that is 3 feet that you will have to excavate there to get 25; it is 22 feet now. How many miles is it?

Gen. TAYLOR. From Vines Bayou to the turning basin is about 3 miles.

Mr. DEMPSEY. Well, that short distance of 3 miles will require 3 feet. What will that cost, for 3 feet 3 miles?

Gen. TAYLOR. It depends on conditions; I can not say.

Mr. DEMPSEY. Well, roughly? That is what there is to do, 3 feet for 3 miles, and 1 foot for 24 miles; figure that out and you will get your maintenance item for this year.

Gen. TAYLOR. I will estimate \$45,000 or \$50,000 to do that dredging in the upper part of the channel, from Vines Bayou up.

Mr. DEMPSEY. That is the 1 foot?

Gen. TAYLOR. No; that is the 3 feet.



Mr. DEMPSEY. Now, what do you estimate for 1 foot for 20 miles?

Gen. TAYLOR. For the 1 foot for 20 miles to mouth of Vines Bayou I estimate upward of \$125,000.

Mr. DEMPSEY. Well, that is \$175,000. Now, there is your maintenance item for the coming year.

Gen. TAYLOR. That is in the upper part. But that is assuming, Mr. Chairman, that you simply take out what there is there now and that no more comes in. Now, that is more than likely to shoal an equal amount the coming year; so that you ought to double that, at least.

Mr. DEMPSEY. The average maintenance for the past five years was \$214,430.

Gen. TAYLOR. Yes; but that has not been maintained even with that.

Mr. DEMPSEY. Well, that makes a pretty good showing, when you are 1 foot short for 20 miles and 3 feet short for 3 miles.

Gen. TAYLOR. Well, for 25 miles we are 5 feet short.

Mr. DEMPSEY. Well, you see the cost of maintaining the whole project has been \$214,000; and you eliminate the more costly half of it, and at a liberal estimate, you have had \$100,000 a year on this part of the project; and this part of the project is not in very bad shape.

Gen. TAYLOR. That is correct.

Mr. DEMPSEY. Now, it does seem to me that that maintenance item could be cut down with absolute safety, and certainly, to \$150,000; and that that would be very liberal, on that examination of details.

Gen. TAYLOR. Well, I do not agree with you, because you are simply taking into consideration the material that was in the channel last June. Now, in addition to that—

Mr. DEMPSEY (interposing). No, I am not. Here is what I am doing: You take into consideration a guess as to what is going to happen; that is, you guess that it is going to shoal a certain large amount beyond the present extent of shoaling of 1 foot for that 20-mile course, and 3 feet for the 3-mile course. Now, I say that the way to judge that is not by a guess or an estimate, but on your experience; and I say that your experience is that, for the past five years you have spent on an average, \$214,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And that at the end of five years, here is your condition, which is not a very bad condition. And so I say you take into account the two things: First, that your average has been \$214,000; and second, that you eliminate the worst half, and to put it liberally, you have spent \$100,000 for this half; and at the end of the term you find a pretty good condition. Now, you can not have a very heavy shoaling when you have spent \$100,000 a year and have as good a condition as you have. And I was taking those things into account; and I say that estimating the future shoaling, and adding 50 per cent to your average for future shoaling, although you have shoaling in the past as well as in the future to take care of, \$150,000 ought to cover it for next year.

Gen. TAYLOR. But here is still another consideration: That work has been done altogether by two Government-owned dredges, the maintenance work. The cost of dredging in the past three or four

years has more than doubled; so to-day that it would cost us more than twice as much to do the work as it did three or four years ago; and I do not believe that the prices are going to decline in the next year so that we will get back to anything like the prices at which we did dredging three or four years ago. In fact, if it does not cost us at the end of this year twice as much as it did four years ago, I shall consider that we are doing extremely well.

Mr. DEMPSEY. Here is what I think you will find: I think you will find that your apex was in 1918-1919. I think those two years were your apex, and they are included in your average.

Gen. TAYLOR. But in those two years we did practically nothing, for two reasons, Mr. Chairman. One was that it was during the war, and we could not do the work. Another was that there was very little business on this channel during the war. I say "very little business"; there was a lot of oil business.

Mr. DEMPSEY. What are your figures for expenditures in 1918 and what are they for 1919?

Gen. TAYLOR. \$146,315 for 1918 and \$80,372 for 1919.

Mr. DEMPSEY. Making about \$226,000 for the two years; so that you just about maintained your average; those years average in with the other?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. So that I think your apex on everything, labor and material cost, etc., was in 1918 and 1919; and I think you went up to that apex in 1917, toward the beginning of 1918; and the costs have commenced to decline and are going to continue to decline all of this year.

Gen. TAYLOR. I trust so.

Mr. DEMPSEY. Now, we want to allow you whatever is right. I want simply to try to analyze the figures with you, that is all. And I agree with you on this, that in view of the very great liberality, to which both you and Mr. Small have referred, of those localities, evidencing an exceedingly praiseworthy spirit, which should have reasonable support, we ought to make a reasonably liberal appropriation for the improvement; but I do think we can cut this maintenance item with entire safety to \$150,000. I think you will not use some of that amount.

Here is another item that I have taken into account: Suppose we grant you, instead of the amount suggested, \$150,000, and suppose we give you a quarter of a million dollars on that estimate of \$1,000,000 for improvement—and I would be in favor of that. Where you do that improvement work, that is going to include the maintenance for that part of the channel?

Gen. TAYLOR. That is correct.

Mr. DEMPSEY. My suggestion would be that we grant \$150,000 for maintenance and grant a quarter of a million dollars for improvement. What do you think of that, Mr. Davis?

Mr. DAVIS. I think that is all right.

Mr. SMALL. Yes; I think that will do.

Mr. DEMPSEY. What do you say to that, Gen. Taylor?

Gen. TAYLOR. That will take care of us fairly well, in comparison with what is allowed for other items. It will not be what they ought to have, and it will not permit the improvement to go ahead at the rate at which it ought to go ahead.

Mr. DEMPSEY. \$150,000 for maintenance and \$250,000 for further improvement; that will give you \$400,000.

Now, we come to three small items.

Gen. TAYLOR. They are all small channels leading up, as Mr. Briggs said, into those little bayous at the head of Galveston Bay, into a territory which is an oil-producing territory, part of it; but most of it is a rice-producing territory. Their rice crops are increasing very rapidly; and it has gotten to be a large rice-producing section. They depend upon these channels for getting their rice crops out. Those channels shoal rapidly, and I think all of those items should be allowed.

Mr. DEMPSEY. Now, the total amount estimated for for the three, Anahuac Channel, Double Bayou, and Clear Creek, aggregates \$23,300, and in Clear Creek in 1919, they had only 389 tons of commerce, valued at \$26,000. Can you not cut that to \$15,000 for the three items?

Gen. TAYLOR. That small amount of commerce in 1919 was because they could not get out through the channel. But I think that, in view of the comparatively recent allotment, we can get along with \$15,000 for the three.

Mr. Chairman, this morning you asked me something about the tonnage carried by the Government barges on the Black Warrior River, Ala. I am informed by telephone by Gen. Connor, who now has charge of that service, that in 1919, the Government barges carried 141,884 tons of business, at a cost of \$176,735, and that the total cost of the service was 177 per cent of the receipts.

Mr. DEMPSEY. They went in the hole 177 per cent?

Gen. TAYLOR. No; they went in the hole 77 per cent; the costs were 177 per cent of the receipts.

During the first nine months of 1920, they carried 150,657 tons, at a cost of \$257,800, which was 199 per cent of the receipts. So that for the first nine months of 1920, they were worse off, so far as profit and loss is concerned, than they were in 1919.

Gen. Connor attributes that very largely to the inefficient plant. He stated that they took over some old barges which are wholly unsuited for that purpose. When he took charge of the service, a question immediately arose as to whether they should abandon that service until the new equipment arrived, or whether they should continue at a loss. Taking all things into consideration, he decided that the best thing to do was to continue the service even at a loss, because it was expected at that time that new barges would very soon become available.

Gen. Connor took charge in the middle of August, 1920. They have received up to date one of the new barges, and one of the new towboats. They have altogether three new towboats, and two power barges on the way; so that he is looking for a very great improvement in the service and an improvement in the showing, so far as losses are concerned, as soon as this new equipment is on the run. They have made only one trip with this power barge, and that was not sufficient to demonstrate anything. They found that the barge had been injured; she had lost two of her rudders, and she had a good deal of difficulty in making the trip.

So that he does not think that is any criterion of what it is going to be in the future. In estimating the cost, they estimate the cost

under the rules established by the Interstate Commerce Commission, the same as any railroad or other common carrier would, taking in all their overhead expenses and everything else.

LAKE PONTCHARTRAIN, LA.

Mr. DEMPSEY. Turning to page 24 of the Book of Estimates, there are three items there headed by Lake Pontchartrain.

Gen. TAYLOR. Yes; Lake Pontchartrain, La.; Chefuncte River and Bogue Falia, La.; and Amite River and Bayou Manchac, La. They are all small items. There is a good commerce on those channels. They all shoal rapidly if they are not dredged frequently, and the amount asked is very small. I think they ought to be granted.

BAYOU GROSSETETE, LA.—BAYOU PLAQUEMINE, LA.

Mr. DEMPSEY. Now, there are three items in the next group. There are two maintenance items, Bayou Plaquemine, La., for which \$20,000 is asked; and Bayou Grossetete, La., for which \$5,000 is estimated for maintenance.

Gen. TAYLOR. Yes. You will see from the report that there is a large commerce for both of those streams; and it is a question of a small amount of dredging.

Mr. DEMPSEY. We will allow you \$20,000 for those two items.

BAYOU TECHE, LA.

The next is Bayou Teche, La., which is a further improvement item. Tell us about that, will you, Gen. Taylor?

The existing project is for a channel 8 feet deep and 80 feet wide, for 54½ miles; and thence 6 feet deep and 60 feet wide for 18 miles; and 6 feet deep and 50 feet wide for 34 miles. The lock and dam have been completed. The dredging and snagging done in 1916 completed that part of the existing project for the 6-foot by 50-foot channel from Arnaudville to Keystone Lock.

Mr. SMALL. That has deteriorated.

Mr. DEMPSEY. Well, the controlling depths at mean Gulf level on June 30, 1920, were: Mile 0 to mile 16, 6 feet; mile 16 to mile 39, 5 feet; mile 39 to mile 98, 6 feet; mile 98 to mile 106, 4 feet. These depths are available throughout the year. That is what the report shows.

It also shows that the work yet remaining to be done to complete the project is the enlargement of the channel between Keystone Lock and New Iberia, to a bottom width of 60 feet, and the enlargement of the channel from New Iberia to mile 10.1 to 8 by 80 feet.

Now, that is what you have to do, is it, Gen. Taylor?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. To increase the depth from 6 to 8 feet?

Gen. TAYLOR. Yes, sir; and increasing the width. Now, any cut in the amount recommended will mean simply slowing up the progress of the work. You will notice that there is a good commerce there, over half a million tons.

Mr. DEMPSEY. It seems to be a pretty good project.

Mr. SMALL. It is a pretty good project.

Mr. DEMPSEY. What do you say to our giving \$57,500?

Gen. TAYLOR. All right; \$57,500; that is cutting it off \$50,000.

ATCHAFALAYA RIVER, LA.

Mr. DEMPSEY. The next item is at the bottom of page 24, Atchafalaya River, La. Tell us about that.

Gen. TAYLOR. That is a channel that extends from Morgan City into the Gulf of Mexico out of the mouth of the Atchafalaya River. And it is the channel that I believe has the record for shoaling of all the channels that we have. It shoals with the greatest rapidity, with a material that is very soft, easily dredged material; so that the difficulty of restoring it to project dimensions are not great. But unless it is dredged very frequently it shoals to such an extent that it is not usable.

Mr. DEMPSEY. Well, your project was 20 feet deep and you completed it; but your controlling depth on June 30, 1920, was 11 feet; so that it is available throughout the year; but it was shoaled in nearly half?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. It looks like a meritorious project, Gen. Taylor.

Gen. TAYLOR. It is a pretty good project; yes, sir.

Mr. DEMPSEY. It seems to me that you can not get along with anything less. How much have we been spending for the last five years, the average, Mr. Clerk?

The CLERK. \$22,200 average for the last five years.

Mr. DEMPSEY. What was the average size of the vessels?

The CLERK. The draft of vessels varied from 3 feet 6 inches to 14 feet.

Mr. DEMPSEY. General, suppose we give you \$30,000?

Gen. TAYLOR. Well, that would have to answer.

Mr. DEMPSEY. Let the record show that Mr. Goodwin, of Arkansas, made a statement as to the merits and advocated the appropriation of the amount estimated for the project for the Ouachita River in Arkansas.

WATERWAY FROM GALVESTON TO CORPUS CHRISTI—CHANNEL FROM PASS CAVALLO TO PORT LAVACA, TEX.

Now, General, on page 27, the next group, you propose to appropriate for five projects \$188,750 for maintenance?

Gen. TAYLOR. Those different items, Mr. Chairman, all pertain to the same project. It is an intercoastal canal from Galveston to Corpus Christi. Those different sections that are referred to are simply sections of the same waterway, extending from Galveston to Corpus Christi. The first section is from Galveston Bay to the Brazos River, the next section is from the Brazos River to Matagorda Bay, and the next is a side channel of the Guadalupe River, and then a channel from Pass Cavallo to Port Lavaca, which is also a side channel, then the channel from Pass Cavallo to Aransas Pass—that goes along down the coast—and the last section from Aransas Pass to Corpus Christi.

Mr. DEMPSEY. Now, Mr. Clerk, give us the average for the past five years?

Gen. TAYLOR. Whatever the average has been it has not been enough, and the channel has been very badly maintained, or not maintained at all. It is a project for a small channel 5 feet deep. The records will show there has been very little business on it. Repeated attempts have been made to navigate the channel, but due to shoaling they have not been able to. People interested in the channel state that if they could be assured of a dependable channel, even 5 feet deep, that they would put on small gasoline towboats and small barges, and then there would be some business, but as it has been there has been shoaling such as to seriously interfere with even a 5-foot navigation.

You see, with a channel only 5 feet deep, if you have a 2-foot shoaling it is a much more serious matter proportionately than 2 feet on a 30-foot channel would be.

Mr. DEMPSEY. Well, now, three of the five items have a little more than a nominal commerce, only 572 tons for one and the other two about 2,500 tons each.

Gen. TAYLOR. That is correct.

Mr. DEMPSEY. Now, the other two have some tonnage; one nearly 16,000 tons and the other nearly 31,000. There is on hand for all of these items \$79,000 in cash.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, Mr. Clerk, give us the average?

The CLERK. From Galveston to the Brazos River, \$15,205.

Mr. DEMPSEY. The whole thing; what has been the average for the last five years?

The CLERK. \$78,000.

Mr. DEMPSEY. And you have \$79,000 on hand?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Suppose we give you \$75,000 more?

Mr. SMALL. Mr. Chairman, I happen to have some information on that, because as the general knows, speaking of commerce, there would have been considerable commerce between Galveston and some of those points using this waterway if they had had even a 5-foot channel in the last few years, and I would like for you to get some expression from the general as to the least amount which he could use in addition to the available appropriation for getting some substantial results.

Gen. TAYLOR. I do not think the amount which is recommended should be reduced at all, for the reason, as I said, that insufficient maintenance is almost as bad as no maintenance at all in that channel. It really means no channel at all, and I think that is an unfortunate thing, to have that little channel down the Texas coast not properly maintained. It gives the whole intercoastal canal an unfortunate reputation, because they say, "Here you have a canal or channel 5 feet deep down the Texas coast and you do not use it." They do not use it because they have not even 5 feet. Five feet is a very small channel anyway, at best, even if maintained to full project dimensions.

It is a fairly expensive channel to maintain, particularly that section in the immediate vicinity of the Brazos River; both east and west of

the Brazos River it shoals very rapidly, due to floods in the river, and I do not see any way of finding out what the channel is really worth until we have fully maintained it for a sufficient length of time to let navigation interests show whether they will or will not use it.

Mr. DEMPSEY. Now, let us take on page 1068, the first branch of the improvement, the ruling depth June 30 was 4 feet. Now, on the next, the second one, your prevailing depth is about 3 feet. That gives you 2 feet to make up.

Now, your next one is 2.5 feet. That is the Guadalupe River.

Now, the next one, the channel of Pass Cavallo to Port Lavaca, your prevailing depth was 5 feet. You have it there, page 1078.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Now, the next is Pass Cavallo to Aransas Pass—no; that is wrong; Pass Cavallo to Aransas Pass is 5 feet, and you have it also from Pass Cavallo to Port Lavaca, so there are two where you have the project depth.

Now, let us take the next one.

Gen. TAYLOR. The next one, from Aransas Pass to Corpus Christi, is a 12-foot project.

Mr. DEMPSEY. Yes. Now, the condition at the end of the fiscal year was 7 feet at mean low tide in the channel and 10 feet in the turning basin?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Now, how long is the channel?

Gen. TAYLOR. Twenty-one and five-tenth miles.

Mr. DEMPSEY. Well, now, you see, you have in two out of that six the project depth; in another one you have 1 foot to gain and another 2 feet, and this last one you have 5 feet in the channel and 2 feet in the turning basin?

Gen. TAYLOR. That channel was very seriously shoaled by the big hurricane in 1919. You will remember it was stated here earlier to-day that the center of that storm struck Port Aransas and Corpus Christi. The town of Corpus Christi had been very progressive; they were establishing a large public wharf and terminal; they had built a wharf at Port Aransas, and they were actually transporting cotton and other articles from Corpus Christi to Aransas Pass with the idea of shipping it there from their wharves to terminals at Aransas Pass. Corpus Christi and that whole country, practically, was pretty nearly laid flat on its back by that hurricane, and they have not recovered from it yet by a very considerable degree, but that channel there would be used, I am satisfied, to a very large extent if it was there.

Mr. DEMPSEY. Well, now, let us look at it as it is. It is one of the very small projects, the kind of projects that if any projects are questionable would come in that class, and with that \$79,000 on hand and an average for the past five years less than that, it does seem to me that if we are going to cut at all, if we give twice the average for the last five years, with the kind of project it is, should you not take that into consideration, General, as well as—

Gen. TAYLOR. We appreciate that fact, Mr. Chairman, but I also know that you have not been able to do business there on that waterway for the lack of depth, and that the project has never been maintained a sufficiently long period to enable people interested in navigation to establish a boat line on it.

Mr. DEMPSEY. The way it appeals to me, I am frank to say—I am not enough of a practical man to know definitely—but the only projects that I have any doubts about in this whole Book of Estimates, and for which I am in doubt about granting estimates if we had the money, are these very shallow waterways. You take any waterway where you have the water and where you have the population so you are going to have the business, and we want to grant them enough to be sure to keep the waterways in condition. I think this kind of a project is, at the very best, a doubtful project. We do not know what it is going to do. It is problematical whether they are going to have any business or not, even if we give them the depth. Now, it does seem to me, on a project of that kind, to give twice the average expenditure, in this kind of a bill, you are being pretty generous.

Mr. SMALL. This is part of the so-called intercoastal waterway along the Gulf, leading from the Florida coast to the Rio Grande. I do not think Congress acted wisely in the past in selecting the projects first to be constructed. In that a mistake was made and I do not think any of them ought to have been authorized with as little a depth as 5 feet. The commerce is small and they do not possess any very great merit, but upon the evidence we have that they would be used if we could maintain a 5-foot channel, we ought to appropriate enough to do that. Now, if the general thinks he can get along with any less than the estimate there of \$188,000, he can do so, but if that amount is absolutely necessary to get that depth, I would rather economize in some other fashion.

Mr. DEMPSEY. Well, you see you have the depth for one-third of the distance; you have only a foot less than the depth for an additional distance, which makes three out of your six, half of the distance, and you have only 2 feet in the balance, and your great lack of depth is in only one project there. You have a lack of 5 feet.

Gen. TAYLOR. There is one very important thing, though, to be taken into consideration, Mr. Chairman, and that is that work must all be done by a Government dredge. We have had a small dredge for use on those channels down there that burned last year. We will need at least this much money in this appropriation to replace that dredge in order to do anything. We lost the dredge this summer, and I doubt very much, even if that full amount there was granted, if we could more than replace the dredge and do very little maintenance dredging. We are making a recommendation at this present time on the basis there would be an item for a new dredge, which, with the maintenance added, would considerably exceed this amount here.

Mr. DEMPSEY. The difficulty is I think we could maintain ourselves on the floor better with the dredge than with this thing.

Gen. TAYLOR. I should say the bulk of that would be used for a new dredge, more than would be used for all of those projects along the Texas coast.

Mr. DEMPSEY. I think you should put that in as a separate matter; I do not think it should come under this item. I would rather defend that as an item for the Texas coast than to defend this. I think if you are granted \$150,000, twice the usual expenditure, that with the kind of project it is, you are going to have difficulty enough if anybody attacks it.



Mr. SMALL. What would a dredge of the type suitable for that work cost, General?

Gen. TAYLOR. We are estimating about \$125,000. That is a small, light-draft, relatively inexpensive dredge.

I was going to say we have had an unfortunate experience with our dredges on the Gulf coast. They are, of course, all oil burners, and we have lost two or three by fire; the oil escapes a little bit, and then somebody lights a match, or it blows out of the boiler room, and it goes up instantaneously, almost. We will have no more wooden dredges. Those have been wooden dredges. We will have a steel-hull dredge, which will be much less subject to damage by fire than the wooden dredge.

Mr. DEMPSEY. General, do you not think, under the circumstances, if we leave that \$88,750 and cut out the balance, that with the \$79,000 on hand you could get along this year?

Gen. TAYLOR. I doubt if we could maintain a channel the project dimensions throughout the year, but we will do the best we can.

#### FREEPORT HARBOR, TEX.

Mr. DEMPSEY. All right. Now, your next is Freeport Harbor, Tex. What do you say as to that, General?

Gen. TAYLOR. That is one of our very troublesome problems. That harbor is located at the mouth of the Brazos River. There is one important business at Freeport, and that is the Freeport Sulphur Co., which mines and ships large quantities of sulphur. I say they mine; they drive pipes into the ground, inject superheated steam, melt the sulphur down in the rock, and then that comes up in a fluid condition. During the past year—in fact, for the past two or three years—they have had a great deal of trouble. The Brazos River, in times of flood, carries a very large load of sediment, which it deposits just outside the entrance to the Freeport Harbor, with the result that the channel is rapidly shoaling. I believe last year they claim they had 19 floods in the Brazos. In other words, it was in flood practically all the time, bringing down this load of sediment practically all the time.

It is now under reexamination with a view to some modification of the project which might better the conditions there. It is still under investigation by the district engineer. It is a project which requires constant dredging, both inside and outside of the jetties, when the river is in flood. When the Brazos River is low, there is relatively little work of maintenance.

Mr. SMALL. In order to meet the contingencies of the flood of the Brazos River there, the department should have a reasonable sum on hand, because after every flood the river and bar shoal to such an extent as to stop navigation of the kind of vessels which navigate the harbor.

Mr. DEMPSEY. Now, let us take the situation as it is, at page 1085.

The channel at the end of the fiscal year had a ruling depth of 18 feet at mean low tide and a width of about 100 feet over the bar, a ruling depth of 21 feet to the turning basin, with 150 feet width, and a ruling depth of about 22 feet in the turning basin.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. In other words, your very lowest draft is 18 feet?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Then turn to page 1087, and you will see the limits of drafts of loaded boats is 16 to 19 feet.

Gen. TAYLOR. If that could be assured—a minimum of 18 feet all the time—they would be doing pretty well. At times during the past year it has shoaled as low as 13 feet, which has made it practically impossible to carry on the business. For the operation of the sulphur plant they bring in oil direct from Tampico, Mexico, and quite a portion of the year they had great difficulty in getting their tugs and barges in and out over the bar.

Mr. DEMPSEY. Now, the traffic consists, I see, entirely of crude oil brought in and sulphur sent out?

Gen. TAYLOR. That is correct. There is really only one company that is interested in this improvement at the present time, and that is the Freeport Sulphur Co.

Mr. DEMPSEY. Have they contributed anything to the improvement?

Mr. SMALL. Oh, yes; see under "Local cooperation."

Gen. TAYLOR. That is not the present company, is it?

Mr. SMALL. Yes; that is the condition under the present act.

Gen. TAYLOR. Oh, yes; the present act.

Mr. SMALL. At top of page 1086, contributed a strip of land 300 feet wide and 2,000 feet long.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. What is the average, Mr. Clerk?

The CLERK. \$79,790 a year for maintenance for the last five years.

Mr. DEMPSEY. Well, you have your depth now; you start in with your depth, and \$41,000 cash on hand, and \$23,000 in outstanding contracts, and with your required depth. Do you not think under those circumstances you ought to be able to get along with the average expenditure?

Mr. SMALL. That would not be sufficient there; I know that harbor.

Mr. DEMPSEY. Well, let us see; you are bound by your result. You have had an average for five years, and you come out with the required depth?

Mr. SMALL. Yes; but it has not been maintained. Those people there have lost thousands of dollars by not being able to use the channel.

Mr. DEMPSEY. They are doing a lot of talking, but the reports do not bear them out. Let us see what the depth was last year and the year before last.

Mr. SMALL. The channel has not been maintained.

Gen. TAYLOR. They are shipping that product, their sulphur, to Galveston and to Texas City by transshipment.

Mr. SMALL. At great expense, by rail.

Gen. TAYLOR. They bring in their oil, as I said, from Tampico, and if they can not get it in over the bar they have great difficulty in getting it at all.

Mr. DEMPSEY. Now, here was your condition in 1919: Channel at the end of the fiscal year, the ruling depth was 14 feet at mean low tide, and a width of about 150 feet over the bar.

In 1919 you had a ruling depth of 14 feet at the mean low tide and 150 feet over the bar, and the ruling depth is 22 feet in the turning

basin. The present shoaling is due to rise in the river, which occurred May 27, 1919.

Now, let us take your 1918: The channel at the end of the fiscal year had a ruling depth of 18 feet at mean low tide, and a width at the bottom of 75 to 150 feet.

Now, in 1917, the ruling depth on June 30, 1918, was 18 feet at the mean low tide with a width of 75 to 150 feet.

The ruling depth on June 30, 1917, was 18 feet at mean low tide.

Gen. TAYLOR. Practically the same depth all four years.

Mr. DEMPSEY. Yes. Well, now, that shows, Mr. Small, that they have had that depth. These fellows may not have had it in their imagination but the books show they have had it.

Gen. TAYLOR. At times during the year, though, Mr. Chairman, that depth has been reduced to 13 or 14 feet.

Mr. DEMPSEY. I think that is true, but you got it back to the 18-foot depth with the average appropriation. Now, you say, you have \$41,000 on hand. What did you say the average was, Mr. Clerk?

The CLERK. \$79,000.

Mr. DEMPSEY. Suppose we give you, in addition to that \$41,000, \$100,000. That is \$25,000, an increase of 25 per cent, and you have pretty nearly 50 per cent on hand.

Gen. TAYLOR. Of course, there is this much to be said. From now until July, 1922, is 18 months.

Mr. DEMPSEY. Fifteen months, is it not?

Gen. TAYLOR. Eighteen months from now—so that if you take that \$41,000 that you have now, add that to \$100,000, it gives you for the 18 months from now until July, 1922, about \$140,000, which is less than an average of \$100,000 a year, you see, which is only a little more than the average for five years.

Mr. DEMPSEY. What would be an average of \$100,000 a year? What would that figure out for the time?

Gen. TAYLOR. Well, it would be \$110,000.

Mr. DEMPSEY. Well, suppose we give you \$112,000 in addition to that \$41,000?

Gen. TAYLOR. All right, sir.

Mr. SMALL. I do not think that would be sufficient. I think you ought to make that at least \$150,000. I know the conditions there, and I happen to know the people who are greatly interested in the channel, and simply by reason of the fact that they began to make representations to me when I was chairman, they have been keeping it up ever since.

Mr. DEMPSEY. I know, but I am afraid they have not been representing it as the record will show it.

Mr. SMALL. Well, I can not say about the records; I only know they are reliable men.

Mr. DEMPSEY. I have no doubt about that.

Mr. SMALL. And the General knows they are constantly making representations about it.

Mr. DEMPSEY. Well, call it \$125,000 in addition to that \$41,000.

Mr. SMALL. Make that \$150,000.

Mr. DEMPSEY. It is too high, and we will have trouble. Well, we will leave it at \$125,000 to \$150,000 and see about it later on.

## BRAZOS RIVER, TEX.

Now, let us see. The Brazos River, \$10,000. What do you say about that, General?

Gen. TAYLOR. I do not think the commerce of the country would go to pieces if they did not get anything on that.

Mr. DEMPSEY. All right; put that down.

Mr. SMALL. I agree with you on that.

Gen. TAYLOR. The Brazos River, the whole thing, from one end to the other, is recommended for abandonment.

Mr. SMALL. You mean above Freeport?

Gen. TAYLOR. I mean the Brazos River; I do not include Freeport Harbor as a point in the Brazos River.

## PORT ARANSAS, TEX.

Mr. DEMPSEY. Now, the next is Port Aransas. What do you say about that, General?

Gen. TAYLOR. Port Aransas, as I stated a minute ago, suffered very severely by the 1919 hurricane. The channel was shoaled to such an extent that they have had great difficulty in using it, and the other works were damaged. The jetties were damaged, and other serious damage was done.

I do not believe, even with \$300,000 which is recommended, we would have any too much. The conditions are these, Mr. Chairman—

Mr. DEMPSEY. That is, \$300,000 on a 20,000-ton project?

Gen. TAYLOR. Well, that is for the reason that they have not been able to get anything in there. You will notice in 1918 they had 121,000 tons in commerce. They have spent quite large sums of money in providing suitable terminals. They were just about beginning to fairly use those terminals when the storm came along and laid everything out. That is a port into which commerce for a considerable portion of southern Texas enters. San Antonio, for instance, is very much interested in it.

Mr. DEMPSEY. Now, Aransas Pass means simply—

Gen. TAYLOR. That little channel right in there [indicating on map].

Mr. DEMPSEY. That is the channel through a narrow strip of land to the inner harbor.

Gen. TAYLOR. That is all. They call at that port marked "Lighthouse," just inside the harbor.

Mr. DEMPSEY. All right.

Gen. TAYLOR. Now, this project was started originally by private interests, who employed an engineer by the name of Houck. He had a private jetty, what he called a reaction jetty, which was this double jetty, which he detached from the land entirely. That, unfortunately, was not a success, and when we took it over there was a channel right across between the island and the end of the jetty. There will have to be some changes made in that jetty before it will ever be a complete success.

Then, we changed that jetty, added to it and built the south jetty, and on this island, St. Josephs Island, a long dike was built, a stone dike. During the hurricane, while it saved the island from being washed through entirely, it was very seriously damaged, and one of

the principal items in the estimate is \$75,000 for the repair of that dike.

Mr. DEMPSEY. Well, how are we interested in preserving that island? Why is not that a private interest?

Gen. TAYLOR. Because if you cut a channel through there it closes up Aransas Pass; that is all. It is purely for the maintenance of that channel.

Mr. DEMPSEY. You mean that if there is——

Gen. TAYLOR. A new channel cut through there.

Mr. DEMPSEY. The water would come down on the west side of the island?

Gen. TAYLOR. Yes; the tide would ebb and flow through that secondary channel instead of Aransas Pass Channel, and Aransas Pass Channel would close up.

Mr. DEMPSEY. Which side does Aransas Pass Channel run on now; west side or east side?

Gen. TAYLOR. No; here is the Gulf out here [indicating]. Here are your two jetties. Now, this map must have been made at about the time we took the work over. That shows the conditions that I referred to. Here is the jetty detached from the island entirely, with considerable space in between there. There was no south jetty then. That has been put in in pencil.

After the Government took it over the north jetty was extended to the land, and an addition was put on the outer end, and then we built that dike on the island.

Mr. DEMPSEY. About the middle of the island?

Gen. TAYLOR. Just about the middle of the island. We placed it in the highest place. As a matter of fact, it is practically flat, and very little above the Gulf level anyway. The project provides for a channel between these jetties up to the anchorage basin in here, and private interests have built this wharf—built terminal facilities at this point. They did have a railroad crossing there, but that was destroyed by the hurricane.

There has also been channel dredging across there.

Then, the Corpus Christi channel leads from here out through this point here, through the bay to Corpus Christi. There is hardly a day goes by that we do not get a representation from all of the interests in central Texas, San Antonio particularly is all the time after us to open up that channel, and they are actually trying to use it. In fact, there was an oil barge went aground there in the last couple of months.

Mr. DEMPSEY. Now, the next is repairs to Aransas Pass.

Gen. TAYLOR. That appropriation is really in the nature of emergency appropriation to repair the damages done by the hurricane in 1919.

The amount expended for maintenance in the past five years has been an average of \$124,351, and for repairs \$55,318, making an average expenditure of \$179,669.

Now, in the total estimate you see it is stated that \$100,000 of this \$300,000 is to partially repair the St. Joseph Island dike. Another item is \$75,000 to repair the jetties.

Mr. DEMPSEY. Where is that?

Gen. TAYLOR. That is on page 1094, bottom of the page.

The other maintenance work is really very small. If there should be another hurricane before the jetties are repaired and the dike is repaired it might very possibly result in the channel cutting across the island and entirely closing up the pass, causing us to lose all the work we have already done there.

Mr. SMALL. Which is the most important of the items of proposed operation for the next year for which the appropriation is asked, General?

Gen. TAYLOR. The maintenance dredging, of course, must be done, if they are going to use the channel at all, but the reaping of that jetty and the St. Josephs Island dike I regard as an extremely important item.

The condition there, Mr. Small, is almost parallel with that at Galveston, and their sea wall out from Galveston City north. It is exactly the same case only this is a smaller scale, that is all. Instead of our building a very large, high, expensive concrete wall, we simply built a rubble stone mound which extends up the backbone of the island, and it did serve the purpose of preventing the cut-off during the last hurricane, although the wall was badly damaged.

Mr. DEMPSEY. Now, General, is this thing going to be, from the standpoint of the Government, anything except a very expensive project in proportion to the amount of traffic it has been moving? It has been costing about \$1 a ton, I see, for the last five years, without any emergency.

Gen. TAYLOR. That is correct, but I think it is a harbor that has excellent prospects for future development.

Mr. DEMPSEY. Now, let us see. The project in the first place was for two rubble stone jetties extending out into the Gulf of Mexico of specific lengths, and for a channel 25 feet deep and 600 feet wide, and for a stone break on St. Josephs Island, about  $3\frac{1}{2}$  miles long, 19,000 feet. Now, your project is 40 per cent completed, two jetties have been built.

Gen. TAYLOR. You know the location of this harbor, Mr. Chairman; it is a long distance from Galveston to Aransas Pass. It is the only harbor, present or prospective, in that section of Texas. There is another small harbor, for which a project has been adopted, leading into the mouth of the Rio Grande, but that is for the Rio Grande Valley particularly. Aransas Pass feeds the country around San Antonio and vicinity.

Mr. DEMPSEY. Yes. Now, I am trying to get at the present conditions.

The condition at the end of the fiscal year was that 40 per cent of the project had been completed, two jetties built. A stone dike connecting with the north jetty has been built on St. Josephs Island, 21,000 feet, approximately, completed in 1916. The channel between the jetties has been improved to 24 feet deep and 100 to 400 feet wide for 10,000 feet, connecting with the harbor island basin, or roadstead. The roadstead has been dredged to a depth of 20 feet at mean low tide and a width of 1,200 feet for a distance of 3,000 feet, and an extension from the north end along Harbor Island 150 to 400 feet wide, for a distance of 2,000 feet. An area of 600 feet wide and 1,650 feet long near the lower end of the harbor basin and adjacent to the docks has been deepened to 25 feet at mean low tide, and an approach channel 12 feet deep at mean low tide and 100 feet wide, with a 200-foot basin,

has been dredged from the harbor basin to the town of Port Aransas. That was completed in 1914.

Harbor Island basin is yet to be completed, the jetties fully extended, and the jetty channel made 25 feet deep and 600 feet wide. It is 24 feet deep now, and 100 to 400 feet wide. This improvement was damaged somewhat by the hurricane of September 13-14, 1919, the channel between the jetties being shoaled to less than 16 feet at mean low tide. That is, it was shoaled from 24 feet to 16 feet. Harbor Island basin was also shoaled and the St. Josephs dike was breached in numerous places, the jetties sustaining minor damages.

Work on the dredging of the jetty channel is progressing.

On June 30, 1920, the ruling depth in the channel between jetties was 17 feet at mean low tide with a navigable width of about 125 feet.

Gen. TAYLOR. Only gained a foot in depth.

Mr. DEMPSEY. Yes; you gained a foot in depth with a navigable width of about 125 feet.

The deep water harbor had a ruling depth of 22 feet.

Gen. TAYLOR. Which is all right after you get in.

Mr. DEMPSEY. With that portion which had been previously deepened.

Let us see your list of boats, Mr. Clerk.

Gen. TAYLOR. You will not find much of anything there for last year, I can tell you that without looking it up.

Mr. DEMPSEY. Well, look at 1918.

Mr. SMALL. You will find, under commercial statistics, at the end of the paragraph on page 1095, a statement that the "usual limits of drafts for loaded boats 16 to 21 feet."

Mr. DEMPSEY. Well, now, it is a question, as I understand it, of repairing the St. Joseph Island Dike, which has been breached in several places, and a question of getting 4 feet more in the channel between the jetties.

Gen. TAYLOR. And getting a suitable channel, Mr. Chairman. That channel is a very unsatisfactory channel; it is crooked and runs close alongside of the jetty, and it is a very dangerous situation. It is only by very skillful navigation that a boat can get in and out of there at all. It is not a channel that any navigator would use if he could avoid it.

Mr. SMALL. It would appear from the paragraph on proposed operations that the most important work to be done during the next year is to repair the jetties, at a cost of \$75,000, and to repair the St. Joseph Island Dike at an expenditure of \$100,000.

Gen. TAYLOR. Those are the two most expensive items.

Mr. SMALL. And for repairing and upkeep of plants, etc., \$26,000, making a total of \$201,000.

Gen. TAYLOR. The importance of that harbor is so great the district engineer has been contemplating sending a dredge from Galveston down there—that is our big seagoing harbor dredge in Galveston Harbor—I do not know whether she has gone down there or not, but I am inclined to think she has gone down there and is at Aransas Pass at the present time dredging, and there must have been some real good reason put up to him to justify him in sending that

dredge there, because it is a risky operation, using that big dredge in that channel. If she can work in the channel she will clear it out within a very short time.

Mr. DEMPSEY. What do you say about \$200,000 on that, General?

Gen. TAYLOR. Well, if you give us \$200,000 we will do the best we can with it.

---

SUNDAY, JANUARY 16, 1921.

HARBOR AT SABINE PASS AND PORT ARTHUR CANAL.

Mr. DEMPSEY. General, we will continue with the Galveston district. The next item is \$175,000 for maintenance of harbor at Sabine Pass and Port Arthur Canal, Tex. What do you say about that?

Gen. TAYLOR. That is all necessary.

Mr. DEMPSEY. Does the canal lead up to Port Arthur?

Gen. TAYLOR. It leads up to Port Arthur from Sabine Pass.

Mr. DEMPSEY. How large a place is Port Arthur?

Gen. TAYLOR. Port Arthur is not a very large place, but the business running through Port Arthur amounts to over 8,000,000 tons. You have referred a number of times, Mr. Dempsey, to the width of entrance to Buffalo Harbor.

Mr. DEMPSEY. Yes, and so far I have not found anything in the country with one-tenth the tonnage that has not about three times the entrance.

Gen. TAYLOR. How much tonnage has Buffalo?

Mr. DEMPSEY. About 14,000,000, I think.

Gen. TAYLOR. Here is one with 8,000,000 with a width half of Buffalo.

Mr. DEMPSEY. I am glad to hear of some rare exceptions. These little projects we have been taking up all along the coast have about 600.

Gen. TAYLOR. All the commerce passes through this canal from Port Arthur down to the Sabine Pass. This canal has a bottom width of 90 feet.

Mr. DEMPSEY. That is just exactly what the Erie Canal has.

Gen. TAYLOR. Yes; but the barge canal is wider than 90 feet.

Mr. DEMPSEY. I do not think the bottom is wider. I think the bottom is just 90 feet.

Gen. TAYLOR. My impression is that the barge canal is wider than that. However, quite a different class of ships go through this canal than go through the Erie Canal or the barge canal which is a 12-foot depth. This is 26 or 28 feet.

Mr. DEMPSEY. This provides for a channel of 28 feet over the bar and 26 feet between the jetties.

Gen. TAYLOR. Twenty-eight feet at the entrance and 26 in through here [indicating].

Mr. DEMPSEY. And of suitable width, now fixed at 200 feet.

Gen. TAYLOR. Which has never been obtained.

Mr. DEMPSEY. But the minds of the engineers are fixed on 200 feet?

Gen. TAYLOR. Yes, sir; we are working to 200 feet if we ever get money enough to get that width.



Mr. DEMPSEY. Of suitable width, now fixed at 200 feet, through Sabine Pass and entrance; thence 26 feet deep and 150 feet wide through Port Arthur Canal to Port Arthur; for two turning basins at Port Arthur, each 26 feet deep, one 600 feet by 1,700 feet and the other 420 feet by 1,800 feet; and for two rubble mound jetties at the pass, one 5 miles long and the other 4 miles long, approximately; the mean tidal variation at the entrance about  $1\frac{1}{2}$  feet and at Port Arthur about 1 foot.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The project as regards dredging was completed in 1914 and the jetty is about 80 per cent completed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What remains to be done is to raise the west jetty to its full height for 6,000 feet, approximately.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I notice you propose to purchase a dredge with your balance on hand. Have you purchased your dredge?

Gen. TAYLOR. No, sir.

Mr. SMALL. There have been no dredges built in the last four years, although you may have purchased one.

Gen. TAYLOR. We have purchased two dredges, one of which we sent to San Juan. You will remember we had great difficulty in getting the work in San Juan Harbor, Porto Rico, started, and we finally purchased a dredge and sent it down there, and we also purchased a small dredge in the Galveston district which is used in this intercoastal canal and which partially replaces the dredge which we lost by fire down there last year.

Mr. DEMPSEY. I notice the controlling depth in the Gulf is 26.2 feet and in the Port Arthur Canal 26.5 feet.

Gen. TAYLOR. Yes, sir; and they tried to use 28 and 29 foot draft boats in there and they would like to use 30-foot draft boats.

Mr. DEMPSEY. Have you the summary of commerce and the maintenance cost?

Mr. MCGANN. The average expenditure for maintenance in the last five years is \$145,922.

Gen. TAYLOR. And the commerce was about 8,000,000 tons last year.

Mr. DEMPSEY. General, page 3750 will give your net registered tonnage?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. There are 306 steamers with a tonnage of 900,000.

Gen. TAYLOR. That is approximately 3,000 tons each, average.

Mr. DEMPSEY. The sailing vessels, of course, would not be as large. Coastwise steamers, 742, with 2,212,000 tons.

Gen. TAYLOR. That is approximately 3,000 tons average.

Mr. DEMPSEY. What is the tonnage of one of these oil tankers that draws 30 feet, do you know?

Gen. TAYLOR. I do not know what the tonnage is.

Mr. DEMPSEY. I was wondering about that because that would give us some information.

Gen. TAYLOR. I know that all the modern tankers are drawing in the neighborhood of 30 feet; and all the new ones that are being

built are about that draft. I say they are all about that draft, I mean the larger ones, and the ones which are the more economical and which the companies want to use. I was at Port Arthur last spring, and I went down the Port Arthur Canal and I saw two tankers there that day, one of which was coming up and one of which was lying at the dock, both of which were drawing about 28 feet. They would have to either lighter part of their cargo or take advantage of an exceptional high tide. It so happened that day that there was an exceptional high tide, due to the wind in the Gulf, and the one which was coming up was coming up on the top of that high tide. Unless that tide lasted, she could not go out with a full cargo. She would have to be lightered.

Mr. DEMPSEY. General, our situation is that while it might be desirable and advisable to have 30 feet, we are limited by our project.

Gen. TAYLOR. That is correct; but there is a new report in. Of course, we can not under our project give them any greater depth than they have at the present time. There is a report in now, however, recommending the deepening of this channel to 30 feet, but that does not affect this appropriation at all, and does not affect the item we are now working on. The only question before us now is the maintenance of the project depth which has already been authorized.

Mr. DEMPSEY. The project depth is 25 feet navigable depth at mean low Gulf, assumed to be 28 feet over the bar and 26 feet between the jetties.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. We have 28 feet in the pass and 26 feet in the canal, but there is no statement of what we have over the bar.

Gen. TAYLOR. It is about the same over the bar as it is between the jetties.

Mr. DEMPSEY. Aside then from the question of the depth over the bar, we have a little in excess of the project depth?

Gen. TAYLOR. We have just about the project depth; yes, sir.

Mr. DEMPSEY. Of course, this is a large port. You have on hand about \$82,000; can you get along with \$150,000?

Gen. TAYLOR. I do not think we can.

Mr. DEMPSEY. That would give you \$230,000.

Gen. TAYLOR. That is correct, but with \$80,000 on hand now and \$150,000, that would mean \$230,000 for approximately 18 months. All of this \$80,000 will be used up long before the beginning of the fiscal year.

Mr. DEMPSEY. You can not touch the other appropriation until the beginning of the fiscal year.

Gen. TAYLOR. Yes, sir; it becomes immediately available.

Mr. DEMPSEY. As soon as it is passed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Is it not 15 months?

Gen. TAYLOR. From the 1st of April to the 1st of July of the next year is 15 months, but from the present time until the 1st of July next year it is approximately 18 months.

Mr. DEMPSEY. This bill will not become a law much before the 4th of March.

Gen. TAYLOR. As a matter of fact, these figures here were made up as of the 1st of December, so it is really 19 months.

Mr. DEMPSEY. That would simply be \$25,000 off of the estimate. I realize fully the importance of the port, but I realize also that our condition as to depth here is probably the best of any port we have struck so far in our entire examination: is it not?

Gen. TAYLOR. I think there is one other port where we struck approximately project depth, and in both cases it was a result of dredging that had just been completed. You will notice in the report that the dredge *Galveston*, which is our big sea-going harbor dredge belonging to the Galveston district, had been dredging there from March 28 to April 15, 1920, and removed 427,000 yards of material in that time. So that we had just come off of this work.

Mr. DEMPSEY. We think you have been diligent and we think you have done well, and now because you have done well we think you could get along with perhaps \$25,000 less, which would be a very small deduction on that estimate. What do you think about that, taking everything into consideration?

Gen. TAYLOR. Well, I should rather not.

Mr. DEMPSEY. Suppose we call it \$160,000.

Gen. TAYLOR. If you have got to make any reduction, I should rather it have \$160,000 than \$150,000.

#### SABINE-NECHES CANAL.

Mr. DEMPSEY. The next item is a canal which includes the Sabine River to Orange and the Neches River to Beaumont, Tex.

Gen. TAYLOR. This is a canal which is really a continuation of the Port Arthur Canal and continues on up by Port Arthur along the shore of the Sabine Lake to the mouth of the Neches River, and one branch up the Neches River to Beaumont and the other branch crosses the Neches River at the edge of Sabine Lake, and going up the Sabine River to Orange.

Mr. DEMPSEY. Beaumont is really the most important oil field there, is it not?

Gen. TAYLOR. Port Arthur is really the big oil shipping point down there. The pipe lines nearly all go to Port Arthur but Beaumont is a big—

Mr. DEMPSEY (interposing). Producing center?

Gen. TAYLOR. No; not at the present time. That was a celebrated field down there but that is not producing as much at the present time. The oil that comes into Port Arthur comes from as far as Oklahoma and I think the fields in Louisiana.

Mr. DEMPSEY. This project is for 25 feet depth and 90 feet width.

Gen. TAYLOR. Yes, sir; that is the section of the canal I spoke of as being 90 feet wide.

Mr. DEMPSEY. Twenty-five feet deep, 90 feet wide through the land, 115 feet wide in the open lakes, 150 feet wide in open rivers, terminating in a turning basin 500 by 1,500 feet on each stream. Part of this known as section B, I notice is to be dredged by the Orange County Navigation District.

Gen. TAYLOR. That is maintenance. That project provided that Orange and Beaumont should make certain contributions in money and that after the project was completed they should agree to maintain the project for three years. The period of maintenance by local interests has now expired in both cases, so that it is now the duty of the Government to maintain it.

Mr. DEMPSEY. The ruling depth on May 18, 1920, in section A was 21½ feet at mean low Gulf level, found near the junction with the Port Arthur Canal and the ruling depth in section C was 24.2 feet. Do those two sections embrace the greater part of the project?

Gen. TAYLOR. Section A includes the section from the Port Arthur Canal through the Sabine-Neches Canal to the mouth of the Neches River. That is the section used by both Orange and Beaumont. Section B is the section from the mouth of the Neches River to Orange, and Section C is the section from the mouth of the Neches River to Beaumont.

Mr. DEMPSEY. Section A is 12 miles long.

Gen. TAYLOR. Yes, sir; that is the canal.

Mr. DEMPSEY. And section C is 23 miles.

Gen. TAYLOR. Section A is this section up here, which is the trunk, you might say. Then one branch goes off up to Orange, section B, and another branch, section C, up to Beaumont.

Mr. DEMPSEY. Then section A and section C really comprehend the part of it that is in active use, I suppose.

Gen. TAYLOR. Section B is also in use, but the commerce of Orange is not as great as the commerce of Beaumont.

Mr. DEMPSEY. Let us see just what you propose to do. With the additional \$135,000 you propose to restore and maintain the project depth in all three sections. Now, what about section B? I can not find any statement about the condition of section B.

Gen. TAYLOR. At the time the report was submitted their three years had not expired. The work was under contract with the Orange navigation district at the end of the year, and they completed the dredging and maintenance proposition shortly after that time, so it now devolves upon the United States.

Mr. DEMPSEY. Have you anything to show us what condition section B is in?

Gen. TAYLOR. Section B is in good condition.

Mr. DEMPSEY. Then your work is really on section—

Gen. TAYLOR (interposing). Section A and section C.

Mr. DEMPSEY. And principally on section A.

Gen. TAYLOR. Principally on section A; yes sir—that is, the 12-mile canal leading from Port Arthur up to the Neches River.

Mr. DEMPSEY. Section C is 23 miles long, which is about one-third of the distance.

Gen. TAYLOR. Section C is much longer, but the greater part of it is through the Neches River where the depth is much in excess of the project depth.

Mr. DEMPSEY. It gets right down to this: You have 12 miles of canal on which you have to excavate 3½ feet.

Gen. TAYLOR. That is an artificial canal altogether.

Mr. DEMPSEY. Yes; and therefore you have  $3\frac{1}{2}$  feet for 12 miles as your problem. What do you say about that? You have \$42,000 on hand.

Gen. TAYLOR. We need the entire estimate.

Mr. DEMPSEY. But you could get along with \$125,000?

Gen. TAYLOR. If that is all we can get, we would have to get along with it.

Mr. DEMPSEY. Colonel, turn to your freight traffic and let us see the classes of vessels there. Are they about the same?

Gen. TAYLOR. Yes, sir. The biggest vessels that can possibly use that channel use it. I know that from personal observation.

Mr. DEMPSEY. These are both good projects. The first one is a good deal better project, is it not?

Gen. TAYLOR. There is only about 2,000,000 tons that goes up to Beaumont, but—

Mr. SMALL (interposing). They are about the same from a navigation standpoint.

Gen. TAYLOR. It is a very rapidly growing commerce, though.

Mr. DEMPSEY. General, we come next to Johnsons Bayou, La.

Gen. TAYLOR. Before you leave the project we were just discussing, Mr. Chairman, I would like to call attention to the comparative statement of commerce on page 1108. This shows that the commerce on the Sabine-Neches Canal has increased from 1915, when it was 543,000 tons, to 2,383,000 tons in 1919, and that the value as given in 1915 was \$4,723,000 and in 1919, \$96,403,000.

Mr. DAVIS. That is chiefly oil, is it not?

Gen. TAYLOR. It is principally oil.

Mr. DEMPSEY. The statement here says, "This commerce is miscellaneous freight, consisting principally of crude petroleum and its refined products, lumber, sand, and general merchandise," but undoubtedly it is principally oil.

#### JOHNSONS BAYOU, LA.

Now, General, let us take up the next item, Johnsons Bayou, La. This is a  $2\frac{1}{2}$ -foot project across the bar and 5 feet part of the way. What do you say about that?

Gen. TAYLOR. This is a little bit of a project which is for nothing but small boats. It is directly across Sabine Lake from Port Arthur, and there is not a railroad or any other means of communication within many miles. It leads up into a fairly good agricultural country, and the only thing I am surprised at is that they have not come in and asked for a greater depth than the project provides for. While the commerce does not run into many thousands of tons, nevertheless it is an important outlet to quite a section of country over in there. They have absolutely no way of getting out except by boat.

Mr. DEMPSEY. You have \$3,242 on hand. Can you get along with \$3,500 instead of \$4,000?

Gen. TAYLOR. Yes, sir.

RED RIVER FROM FULTON, ARK., TO MOUTH OF WASHITA RIVER, OKLA.

Mr. DEMPSEY. General, the next item is \$89,000 for maintenance of the Red River below Fulton, Ark., in the Vicksburg, Miss., district. Tell us about that.

Gen. TAYLOR. I would like to call your attention to the paragraph on page 1131 of the report, "Recommended modifications of project."

Mr. DEMPSEY. That would reduce your estimate to \$55,000, would it not?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. That recommendation seems to me to be so important that I suggest a note be made of that for reference to the Rivers and Harbors Committee.

Gen. TAYLOR. At Senator Jones's request, I gave a list of all the projects similar to this on which recommendations had been made for abandonment or modification, and I sent a copy of that list to Mr. Kennedy, the chairman of the Rivers and Harbors Committee, so that he has a list of all those on which recommendations similar to this have been made.

Mr. DEMPSEY. Do you think we ought to spend the \$55,000?

Gen. TAYLOR. I think it is quite desirable to have a small fund there which we can use to take out snags that collect in the river and prevent the formation of obstructions such as existed in the Red River many years ago. When a snag catches on the bottom, other snags accumulate around it; then the sediment from the river fills in and it really becomes an island. That had the result many years ago of absolutely blocking the river and preventing any possible navigation, and also caused very serious damage to adjacent country by raising the flood level.

Mr. DEMPSEY. Do you think you could get along with anything less than \$55,000?

Gen. TAYLOR. I think the \$55,000 is necessary, because at the present time we must rebuild the snag boat and it will take a considerable portion of that \$55,000 to rebuild the snag boat, even if we do not do any other work at all.

#### OUACHITA AND BLACK RIVERS, ARK. AND LA.

Mr. DEMPSEY. The next item is that of the Ouachita and Black Rivers, Ark. and La.

Mr. SMALL. That is the project about which Mr. Goodwin appeared before the committee.

Mr. DEMPSEY. The estimate is \$25,000 for maintenance and \$433,000 for further improvement. Tell us particularly about the further improvement, General.

Gen. TAYLOR. The further improvement provides for the completion of work on Dam No. 5, the modification of Nos. 6 and 8, and the reconstruction of Dam No. 4. The original project called for 9 locks and dams. By the relocation of one of the lower dams we were able to omit the lowest dam, No. 1, and by a subsequent modification, which was authorized by Congress last year, we made changes in two of the others, 6 and 8, raising them slightly, so that

we omitted Nos. 7 and 9. Therefore, the project now provides for six dams instead of nine.

Mr. DEMPSEY. This is a project on which \$4,500,000 has been spent altogether.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The tonnage is very small for such an expenditure, and it is proposed, as I understand it, to construct another lock and dam.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Is there any urgent necessity for pushing this work to completion?

Gen. TAYLOR. There is; yes, sir; \$195,000, in addition to what we have on hand, it is estimated will complete Lock No. 5, and I think that amount should be given.

Mr. SMALL. I suggest that amount because it is for a specific purpose. The committee had this project before it in December, 1918, in the formulation of the river and harbor bill of 1918, and after long discussion in committee, Gen. Taylor being present, an agreement was entered into for the modification of the project. I would like that modification to go into the record.

[Memorandum dictated by the chairman (Mr. Small) at meeting of the Committee on Rivers and Harbors, Dec. 20, 1918.]

OUACHITA RIVER, ARK.

DECEMBER 20, 1918.

Referring to the Ouachita River, La., and Ark., the committee this day adopted the modified project in accordance with the report submitted in committee Document No. 7. Sixty-fifth Congress, second session, and while the motion for the adoption of the project was pending Gen. Taylor, representing the Chief of Engineers, stated that the adoption of the modified project involved the completion and operation of Locks and Dams Nos. 2 and 3, the restoration of No. 4, the completion of No. 5, the elimination of Locks and Dams Nos. 7 and 9, and the raising of Dams Nos. 6 and 8, as specified in the report, and dredging in pools Nos. 6 and 8; also the continuation of such snagging work from time to time as may be necessary for the maintenance of the improvement, and the elimination of that portion of the project between Camden and Arkadelphia.

Mr. DEMPSEY. That was for doing away with two of the locks and dams.

Mr. SMALL. Yes. It involves the completion and operation of Locks and Dams Nos. 2 and 3, the restoration of No. 4, the completion of No. 5, the elimination of Locks and Dams Nos. 7 and 9, and the raising of Dams Nos. 6 and 8, as specified in the report, and dredging in pools Nos. 6 and 8; also the continuation of such snagging work from time to time as may be necessary for the maintenance of the improvement, and the elimination of that portion of the project between Camden and Arkadelphia.

Gen. TAYLOR. That resulted in a very large reduction in the estimated cost of the project.

Mr. SMALL. And reduced the original project very much?

Gen. TAYLOR. Yes; it reduced the original project.

Mr. DEMPSEY. About what did it effect in the way of an estimated saving, approximately?

Gen. TAYLOR. \$862,000 was the saving.

Mr. DEMPSEY. Do you not think, estimating a probable 20 per cent deduction, as the district engineer from Norfolk thought we could

effect over the estimates, that calling the \$195,000 \$200,000 and deducting one-fifth, which would be \$40,000, that you could make that \$160,000 and get along?

Gen. TAYLOR. I do not think the work can be done for \$160,000.

Mr. SMALL. With every desire to economize, it seems to me that that specific thing ought to be done.

Mr. DEMPSEY. Can you do it for \$175,000?

Gen. TAYLOR. I should not want to say that we could do it for any less than the \$195,000 estimated, but if you give us \$175,000 we would use it as far as we could toward the completion of Lock No. 5, but I doubt very much whether it would complete it.

Mr. DEMPSEY. In making your estimate of \$195,000, are you not figuring on the basis of prices at the time your estimates were formed instead of on present prices?

Gen. TAYLOR. I do not think so. I have been looking over the report and trying to find out what the basis was, but I think the estimate was made on the basis of the previous estimate, which was made before the report was submitted; in other words, that was made back in 1917, probably.

Mr. DEMPSEY. This is a piece of work where, I think, we ought to cut to the limit.

Mr. SMALL. You will notice that the commerce has increased.

Mr. DEMPSEY. Not very much; the commerce in 1917 was 178,000 tons and in 1919 147,000 tons, so that there has been a decrease instead of an increase.

Mr. SMALL. Suppose you make it \$180,000.

Mr. DEMPSEY. Taking everything into consideration, what do you estimate the lowest at which that lock can be completed?

Gen. TAYLOR. \$195,000; if that amount is not allowed, any less amount will be used toward the completion of the lock. There will be certain items that can be left off without real serious detriment; the lock will not be usable, perhaps.

Mr. DEMPSEY. And it is possible that this may have been estimated on the basis of material and labor at the time the estimates were made, and that there may be a reduction there which would give us some benefit?

Gen. TAYLOR. It is possible that the work could be done cheaper than our estimate.

Mr. DEMPSEY. Without any detriment to that particular lock, we could call that \$175,000, could we not? I mean the work would not suffer and it would be in a condition to be completed?

Gen. TAYLOR. It would be in a condition to be completed; yes, sir.

Mr. DEMPSEY. That \$25,000, I take it, you need.

Gen. TAYLOR. Yes, sir; for snagging.

Mr. DEMPSEY. Here are four items, General, in that same group.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Two of \$5,000, one of \$3,000, and one of \$2,000. Let us get on the record the project depths, and then your statement as to how you classify those items. First, I would call your attention to the fact that as far as the first item is concerned there is a fair tonnage, 73,000 tons. The next two items have a nominal tonnage, 3,300 and 4,200 tons, while the last item has some tonnage, pretty nearly 19,000 tons. You have practically nothing on hand, and



taking all those things into consideration, what have you to say as to those items?

Gen. TAYLOR. They are all small snagging items; nothing else.

Mr. DEMPSEY. And that makes \$15,000. Can you get along with \$10,000?

Gen. TAYLOR. It would be rather close work.

Mr. DEMPSEY. But you are prepared, in the interest of the public, to do close work?

Gen. TAYLOR. To do the best we can; yes, sir.

Mr. DEMPSEY. You think that would do, taking it all in all, do you not?

Gen. TAYLOR. Well, I should rather like to have the full amount appropriated.

Mr. DEMPSEY. You have next a group of five items—\$16,000, \$2,500, \$10,000, \$12,000, and \$2,500, for maintenance.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Tell us about those.

Gen. TAYLOR. Those are also all snagging propositions.

#### YAZOO RIVER, MISS.

Mr. DEMPSEY. On the first item there are 116,000 tons of commerce; that is, on the Yazoo. On the second item the tonnage is very small, the Tchula Lake, 8,000 tons. The third item has some commerce, 68,500 tons, Tallahatchie and Coldwater Rivers, Miss. The fourth item, the Big Sunflower River, Miss., has 41,000 tons, and the Steele and Washington Bayous and Lake Washington, Miss., have 16,700 tons. Under those items you have very little on hand. Now, taking that all into consideration, that amounts to \$43,000. Can you get along with \$30,000?

Gen. TAYLOR. We could do three-fourths of the work that we estimated on. Whether that would be sufficient or not I can not say at the present time. It would depend a good deal on conditions that might exist in the river while we are doing the work.

Mr. DEMPSEY. Mr. McGann, give us the average of those items for five years.

Mr. MCGANN. The average expenditure for the last five years has been \$29,000.

Mr. DEMPSEY. \$30,000 would be \$1,000 over the average. With the amount of operation and the amount of commerce do you not think \$30,000 would be a fair amount, especially in view of the fact that we are cutting some of the more important projects?

Gen. TAYLOR. In comparison with other projects that would be a fair allowance; but I would like to call attention to the fact that that would be \$30,000 for 15 months, assuming that this becomes available by the 1st of April.

Mr. DEMPSEY. You have \$11,850, practically \$12,000, on hand in cash, and in outstanding contracts nearly \$6,000, so that you have \$17,000 or \$18,000.

Gen. TAYLOR. That was on the 1st of December, and those were undoubtedly pay rolls, supplies, and things like that, which had been purchased prior to the 1st of December, and those mounts were probably all paid during the early part of December.

Mr. DEMPSEY. That would simply be as to your outstanding contracts.

Gen. TAYLOR. The outstanding indebtedness; yes, sir. Of the amounts on hand, amounting to \$11,850, there may still be something left and probably is.

Mr. DEMPSEY. You have two items for further improvement?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. For the Big Sunflower River, \$13,000. What is that for?

Gen. TAYLOR. A small amount of dredging.

Mr. DEMPSEY. To secure a channel  $4\frac{1}{2}$  feet deep?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Do you think you need any part of that, General?

Gen. TAYLOR. I think it is more important that the full amount of the maintenance appropriation be given rather than continuing further improvement.

#### ARKANSAS RIVER, ARK. AND OKLA.

Mr. DEMPSEY. The next is the Little Rock, Ark., district. The first item is an estimate of \$48,000 for the maintenance of the Arkansas River in Arkansas and Oklahoma. Forty-two thousand five hundred and fifty dollars is on hand in cash, and \$2,500 in outstanding contracts, so that probably we can figure on the \$42,000. What have you to say about that?

Gen. TAYLOR. I will call attention to the recommendation of the modification of the project on page 1174, near the bottom of the page.

Mr. DEMPSEY. That could be reduced, anyway, to \$35,000.

Gen. TAYLOR. Yes, sir; and with the amount that we have on hand, \$42,000, it could be reduced to \$20,000.

Mr. DEMPSEY. I call attention to the fact, General, that, as shown by the tabulation on page 1175, the traffic on this river has steadily decreased, both in volume and in value, in spite of the high prices.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. In 1919 it was 24,000 tons, approximately, of the value of \$190,000, approximately, as against 33,000 tons, approximately, with a value of approximately \$850,000.

Gen. TAYLOR. Yes, sir; and the explanation of that is given at the bottom of page 1174, showing that 98.3 per cent of the commerce reported was forest products, principally in the form of logs.

Mr. DEMPSEY. In other words, it was largely a logging proposition?

Gen. TAYLOR. Yes, sir; and that is what it is now.

#### WHITE RIVER, ARK.

Mr. DEMPSEY. The next items are grouped. There are four maintenance propositions in one group, including the White River, Ark., \$30,000; with a tonnage of 220,000, worth \$1,500,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The next is the Black River, Ark. and Mo., \$24,000, with 121,000 tons of commerce, worth \$500,000; the Current River, \$9,750, with a very small tonnage of 6,700, worth \$40,000;

the St. Francis and L'Anguille Rivers and Blackfish Bayou, Ark., \$12,000, with a tonnage of \$20,000, worth \$1,250,000. That estimate of \$9,750, with a tonnage of 6,700, valued at \$40,000, would represent an expenditure of \$1.25 per ton; that is, based on the tonnage.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Why should not that be dropped out, to begin with?

Gen. TAYLOR. I suspect, Mr. Chairman, that there is really more commerce on that river than is shown in the report.

Mr. DEMPSEY. It would not do for us to be guided by suspicions.

Gen. TAYLOR. That is true.

Mr. DEMPSEY. It is bad enough to take what we think are facts.

Gen. TAYLOR. This is a small stream, on which small motor boats operate, and it is necessary that some snagging be done in order to make it safe.

Mr. DEMPSEY. I do not see what the project on the White River is for.

Gen. TAYLOR. You are going back to the White River?

Mr. DEMPSEY. Yes; I do not see what that project is for.

Gen. TAYLOR. It provides for channel maintenance by contraction work, by the removal of rocks, bowlders, and snags, and by dredging.

Mr. DEMPSEY. What is the depth?

Gen. TAYLOR. There is no project depth stated. What it amounts to is really the maintenance of the natural channel.

Mr. DEMPSEY. The natural channel seems to have an average depth of from 15 to 33 feet. Is that right?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. This report says, "The stream has an ordinary freshet fluctuation of 15 feet throughout the portion included in the project and an extreme flood fluctuation of 56 feet at its mouth."

Gen. TAYLOR. That means the difference between high water and low water. We do not ordinarily take the high-water conditions, but take the low-water conditions.

Mr. DEMPSEY. Aside from that this report does not show.

Gen. TAYLOR. That is the original condition. In the paragraph dealing with the original condition there is a statement of the drafts that can be carried.

Mr. DEMPSEY. Where does it state that?

Gen. TAYLOR. Near the top of page 1177. It states, "The maximum drafts that could be carried over the river at low water were 3½ feet to De Valls Bluff, 2 feet to Augusta, and 18 inches to Jacksonport, the latter place being then considered the head of low-water navigation."

Mr. DAVIS. General, you sometimes take the high-water conditions into consideration, when it extends over a period of five or six months in the year, do you not?

Gen. TAYLOR. Yes, sir; but not in a stream like this. This stream is subject to irregular high water, and you could not count on the high water lasting for any length of time.

Mr. DAVIS. During this year the Minnesota River has had from 15 to 18 feet of water in it all the time.

Mr. DEMPSEY. What is the average on that for the past five years?

The CLERK. For the White River, \$17,981; the Black River, \$11,774; the Current River, \$3,435, and the St. Francis and the L'Anguille Rivers, \$5,459.

Mr. DEMPSEY. What does that make?

The CLERK. \$36,500.

Mr. DEMPSEY. Suppose we give you \$40,000 for that, General?

Gen. TAYLOR. We could do with that what we have done on an average for the last five years.

Mr. DEMPSEY. What do you say about the Current River?

Gen. TAYLOR. That might have to be cut out entirely, possibly.

Mr. DEMPSEY. If you cut that out, that would leave you \$65,000 as against an average expenditure of \$36,000.

Gen. TAYLOR. This is an item in which a considerable portion of the money is estimated for repairs of plant.

Mr. DEMPSEY. I see in the first item, for the White River, \$8,000 is estimated for repairs to plant. The second appears to be a revetment and levee project. There does not seem to be any estimate for that.

Gen. TAYLOR. There is an estimate of \$8,000 for repairs to plant in the next item.

Mr. DEMPSEY. That is under the Black River.

Gen. TAYLOR. That is the Black River.

Mr. DEMPSEY. How about the Current River?

Gen. TAYLOR. For the Current River, \$2,750.

Mr. DEMPSEY. What is your next one?

Gen. TAYLOR. The next one is \$4,000, making \$22,750.

Mr. DEMPSEY. What did you say the average was?

Gen. TAYLOR. \$39,000. If you add \$39,000 to the \$22,750 that we propose to spend for repairs to plant, it would be \$61,000.

Mr. DEMPSEY. You do not want to do anything on the Current River.

Gen. TAYLOR. I know; but you use the same plant on all of these different streams, so that the amount you have to put in for plant will be the same.

Mr. DEMPSEY. That makes \$50,000, roughly speaking?

Gen. TAYLOR. \$60,000.

Mr. DEMPSEY. \$22,000 and \$39,000.

Gen. TAYLOR. That would be \$61,000. If you make it \$60,000 we could probably get along with it.

Mr. DEMPSEY. What do you think about that, Mr. Small? They are not important streams.

Mr. SMALL. No.

Mr. DEMPSEY. You have, altogether, on these streams only 500,000 tons of commerce, and this would be \$60,000.

Mr. SMALL. I think we had better give the \$60,000. We are confronted with the alternative of abandonment, if they are not kept up to a limited extent.

Gen. TAYLOR. For the last few years we have allowed that plant to deteriorate, and it will be necessary to have something to put it back in conditon, unless we are to abandon it.

#### MISSISSIPPI RIVER.

Mr. DEMPSEY. The next item is the Mississippi River, between the Ohio and Missouri Rivers. There is an estimate here of \$1,000,000 for further improvements.

Gen. TAYLOR. Including maintenance.

Mr. DEMPSEY. You had on hand on the 1st of December \$309,000 and \$46,899 in outstanding contracts, making something over \$350,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Let us see what part of the river that is.

Gen. TAYLOR. That is from the mouth of the Ohio to the mouth of the Missouri.

Mr. DEMPSEY. That is between Cairo and St. Louis?

Gen. TAYLOR. It is between Cairo and St. Louis.

Mr. SMALL. The distance is 183 miles.

Mr. DEMPSEY. What has been the average expenditure there for the past five years?

The CLERK. \$396,775 for improvement and maintenance.

Mr. DEMPSEY. That is at the rate of about \$400,000 a year. Let us take up your detailed statement at page 1201.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. It is regulation work, dredging and maintaining the channel depth. Those are the two, are they not?

Gen. TAYLOR. Yes, sir. I would like to call your attention to the paragraph at the middle of page 1201.

Mr. DEMPSEY. Considering the fact that you have over \$350,000 on hand, can you not make reasonable progress with these improvements with practically \$500,000?

Gen. TAYLOR. The difficulty has been that we have had \$500,000, or thereabouts, and we have not been able to even keep up the work that has been previously done.

Mr. DEMPSEY. I know; but for something over a year you will have had something over \$800,000.

Gen. TAYLOR. That is from the 1st of last December, or 19 months.

Mr. SMALL. It would be 18 months, would it not?

Gen. TAYLOR. The \$350,000 was on hand on the 1st of December, and counting from the 1st of December, 1920, to the 1st of July, 1922, would give you 19 months. In the interest of inland navigation I would like to see that \$1,000,000 estimate allowed. I think if we can not navigate the Mississippi River we had as well give up inland navigation anywhere in the United States. That seems to be a test case.

Mr. DEMPSEY. I agree with you, and we are very anxious, indeed, to help commerce down the Mississippi River. We realize that commerce should be promoted to the Atlantic seaboard and to the Gulf, but we are trying to get these appropriations within certain limits, and we want to make this proportional with the other amounts. Considering that you have \$350,000 on hand, if we granted you \$500,000 more it would make it about proportional. What do you say to that?

Mr. DAVIS. I think that is enough, and I am a great Mississippi River advocate.

Mr. DEMPSEY. So am I, and I want to help it in every way.

Mr. SMALL. This portion of the Mississippi River includes St. Louis. That is only 17 miles below the mouth of the Missouri, and with the present efforts to increase traffic on the river it is a very important section of the river. Of course, we must economize and curtail appropriations. It is only a question of how much we can afford under the circumstances to appropriate.

Mr. DAVIS. I think we can afford more next year than this.

Mr. DEMPSEY. I think so, too. The more reasonable we are in these appropriations, the greater the likelihood of having them adopted.

Mr. SMALL. Then, I would authorize that amount.

Mr. DEMPSEY. General, we would like to have your O. K. of that.

Gen. TAYLOR. As I said, I would rather have the full amount of \$1,000,000 given, but if \$500,000 is all that the committee feels can be allowed, we shall do what we can with \$500,000. The probabilities are that with \$500,000 we will be able to maintain the channel in fair condition, but we will not be able to do the repair and reconstruction work on some dykes and other works of that character that ought to be done.

Mr. DEMPSEY. You ought to be able to complete that work.

Gen. TAYLOR. That work has deteriorated during a good many years and should be repaired and placed in proper condition. The longer we put it off the more it will cost, and the more it will cost to keep the channel in proper condition.

Mr. DEMPSEY. You ought to figure that with this average of \$396,377, or of nearly \$400,000, and if you call this period a year and a half you have had \$850,000 for 18 months, or \$600,000 in a year. You will have left \$250,000—

Gen. TAYLOR (interposing). More than the average expenditure.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. But the average expenditure has not been sufficient.

Mr. DEMPSEY. I realize that; but you have allowed your permanent works to get into a condition needing repair. But if you will take that average during the past five years you will see that it includes three war years. You ought to have \$250,000 toward repairs of permanent works.

Gen. TAYLOR. There will be something toward repair of permanent works, undoubtedly.

#### REMOVING SNAGS AND WRECKS FROM THE MISSISSIPPI RIVER BELOW THE MOUTH OF THE MISSOURI RIVER.

Mr. DEMPSEY. The next item is for removing snags and wrecks from the Mississippi River below the mouth of the Missouri River and from Old and Atchafalaya Rivers.

Mr. SMALL. There is an authorization of \$100,000 a year there, and this estimate of \$50,000 is in addition to that?

Gen. TAYLOR. Yes, sir. It has been found impossible to operate the necessary snag boats with the old appropriation of \$100,000, which was a yearly appropriation authorized in 1888.

Mr. SMALL. That is carried in the sundry civil bill?

Gen. TAYLOR. No, sir; we simply draw a warrant on the Treasury for that.

Mr. SMALL. Under the authorization?

Gen. TAYLOR. Yes, sir; it is an authorization.

Mr. DEMPSEY. The only question here is whether you can reduce that 20 per cent on the basis of reduced costs?

Gen. TAYLOR. No, sir; we can not, because we have not operated those boats for several years past under the \$100,000 appropriation. That is not based on 1919, but it is based on several years' experience.

For several years we have been running behind in the operation of the boats and have been laying them up.

Mr. DEMPSEY. What does this statement mean—"Available December 1, \$38,000, and amount of outstanding contracts, \$9,700"? Does that mean a hang-over from last year?

Gen. TAYLOR. That is for the current fiscal year. That is a part of the appropriation for the current fiscal year.

Mr. DEMPSEY. That is a part of the \$100,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You would have \$49,000?

Gen. TAYLOR. Yes, sir. At the beginning of the year, in accordance with the law, we make a statement of the amount that will be used each quarter, and we divide it up into approximately equal parts. Then we use so much each quarter. We can not exceed that statement without authority from the Secretary of War.

Mr. DEMPSEY. It appears that from 1896 to 1920, inclusive, the operation of snag boats and dredge boats on the upper Mississippi River and tributaries varied between \$80,000 and \$101,000; that is from 1896 down to and including 1917. In 1918, 1919, and 1920 it ran from \$100,000 to \$105,000. Now, is there anything in the situation that would warrant us in thinking that it would run above \$105,000, which is apparently the largest expenditure in 2 years?

Gen. TAYLOR. I do not know where those figures came from, because they do not agree with the figures given on page 1204 of the annual report.

Mr. DEMPSEY. Where?

Gen. TAYLOR. In the financial summary. In 1919 there was \$117,000.

Mr. SMALL. That was based on an appropriation of \$50,000 additional in 1919?

Gen. TAYLOR. The 1919 bill carried \$50,000 additional.

Mr. SMALL. In accordance with the present estimate?

Gen. TAYLOR. Yes; just the same as we are asking for now.

Mr. DEMPSEY. According to the financial statement on page 1204 you never reached the peak over \$100,000 except in 1919 and 1920. In 1919 you went up to \$118,000 and in 1920 you went up to \$140,000?

Gen. TAYLOR. We did not, Mr. Chairman, because we did not have any money; we could not very well go over \$100,000 when we did not have over \$100,000. That is the reason we did not go over that amount.

Mr. DEMPSEY. Taking into consideration the statistics as they are, that there really has been no excess except in those two peak years of the war, and that prices are declining instead of increasing, do you not think that the \$50,000 should be cut in two? That would give you as much as you have ever had except in one period?

Gen. TAYLOR. It might be possible to operate those boats with only \$25,000 additional.

Mr. DEMPSEY. On page 1203 at the bottom you say:

The old wrecks have nearly all been removed and the district is now so efficiently and thoroughly patrolled that disasters caused by vessels striking channel obstructions seldom occur.

You are going to have less instead of more than in the past, and you never had but one year when you had equal what we will grant this year?

Gen. TAYLOR. While there are less wrecks and obstructions in the river, if we did not patrol the river and take up the obstructions as fast as they accumulated, we soon would have as many as we had when Mark Twain used to sail up and down the river, and the job of a pilot was a real job in those days.

Mr. DEMPSEY. I think that is right. I think that \$25,000, General, will be liberal under the facts as they have been developed.

MISSISSIPPI RIVER BETWEEN MISSOURI RIVER AND MINNEAPOLIS, MINN.

Seventy thousand dollars for Mississippi River between Missouri River and Minneapolis, Minn., for maintenance—tonnage, 674,000 tons?

Gen. TAYLOR. And \$1,930,000 for further improvement.

Mr. DEMPSEY. Yes.

General, please point out on the map the portion of the river which is affected by this item.

Gen. TAYLOR. It goes from the mouth of the Missouri River [indicating] over to Minneapolis [indicating].

Mr. DEMPSEY. What is the controlling depth in the river to-day?

Gen. TAYLOR. At low water it is about  $4\frac{1}{2}$  feet.

Mr. DEMPSEY. What traffic is there?

Gen. TAYLOR. The traffic is comparatively small, but it is expected that next summer there will be in operation on that section of the river a fleet of towboats and barges which have been built by the Government, starting with the Shipping Board and leased to Mr. Goltra, of St. Louis. This fleet of boats consists of 4 towboats and 19 barges, which have cost about \$3,300,000, each barge approximately 300 feet long with 46-foot beam and carrying 700 tons of cargo on 5-foot draft and 2,500 tons on 7-foot draft, which is a full load, so that they can be loaded according to the stage of the river. If we had 6 feet in the channel, as the project calls for, they could carry nearly 2,000 tons per barge. The towboats have 1,800 horsepower and draw  $4\frac{1}{2}$  feet. They are very large and very powerful boats.

Mr. DEMPSEY. How long will it take the fleet to make the voyage, what is the distance, how many voyages do you figure they can make a year, what in the way of commerce do you figure they can carry per season, what is the length of the season, what is the length of the course, and the amount they will carry each trip each way?

Gen. TAYLOR. The distance is about 660 miles. I do not know just where his docks are located, but it is approximately 660 miles, or a mile or two one way or the other. The amount that can be carried depends entirely upon the stage of the river and the depth of the water.

Mr. DEMPSEY. At the lowest stage— $4\frac{1}{2}$  feet?

Gen. TAYLOR. He could only carry 700 tons per barge; probably three barges in a tow, which would make 2,100 tons—2,000 tons.

Mr. DEMPSEY. How many such boats have you?

Gen. TAYLOR. Nineteen barges and four towboats.



Mr. SMALL. How many are completed?

Gen. TAYLOR. The barges are all completed. The towboats are only partially completed, but it is expected that a part of them will be ready for operation by the time navigation opens and the balance will be delivered during the season, so before the end of the season the entire fleet will be ready for operation.

Mr. SMALL. What do you mean by the end of the season?

Gen. TAYLOR. From the time that the ice leaves the river in the spring until it freezes up again; the open-river season.

Mr. DEMPSEY. From about the 1st of May?

Gen. TAYLOR. From about the 1st of April until the 1st of December.

Mr. DEMPSEY. You will not quite make that?

Gen. TAYLOR. It depends altogether on the season.

Mr. DEMPSEY. It will not be better than from the 1st of May to the 15th of November; that is about what you will have. That has been my observation of the Erie Canal.

Gen. TAYLOR. On the Great Lakes it is from the 1st of April to the 1st of December. It would be more nearly what they operate on the barge canal on the upper Mississippi around St. Paul; it opens up about the middle of April and closes by the middle of November.

Mr. DAVIS. I do not think that river is closed that long. It is not closed more than four or five months.

Mr. DEMPSEY. Seven months' operation; that is just about it.

Mr. SMALL. Is the Government properly protected by the contract which has been entered into?

Gen. TAYLOR. We endeavored to protect the Government fully.

Mr. DEMPSEY. That is a matter of opinion, and Gen. Taylor is not a lawyer.

Gen. TAYLOR. I should be very glad to furnish you with a copy of the contract. I think it might be a good thing to have a copy of the contract available.

Mr. SMALL. I think it would be well to have it in the record.

Mr. DEMPSEY. Yes, sir.

I just want to get, as near as I can, some sort of an estimate. Nineteen barges, with 700 tons—

Gen. TAYLOR (interposing). That is at low water.

Mr. DEMPSEY. I know, but let us figure it at low water.

Gen. TAYLOR. Of course, the low water does not exist during the entire season. If they should carry 700 tons on a barge for the entire season you might as well at the beginning of the experiment say that you have a failure.

Mr. DEMPSEY. What do you think the average would be, let us figure it that way?

Gen. TAYLOR. It ought to be over 1,000 tons, say, 1,200 tons.

Mr. DEMPSEY. One thousand two hundred tons and 19 barges?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That would be 22,800 tons to a trip. The towboats do not carry any?

Gen. TAYLOR. The towboats?

Mr. DEMPSEY. The towboats do not carry anything?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. Six hundred miles, what do you figure they will make that voyage in?

Gen. TAYLOR. I can not make any estimate at all, Mr. Chairman, because I have absolutely no data to go on and it would be absolutely a guess. They made one trip down the river only last year with three of those barges and small towboats. We had no towboat anywhere in this country of that size and power operated on the upper river until those boats were purchased and put into the service, and any statement would be very much of a guess. Of course, we could figure what they could make in the good section of the river and could figure how long to go through the narrow section and how long to pass through the locks—there are three locks—all such things as that could be figured, but after all it is pretty much of a guess. By the end of the season we can give you accurate figures and tell you exactly how long it should take and how much each could carry and what they had carried during the season, provided they are operated all the season.

Mr. DEMPSEY. What have they been making the trip in between Buffalo and New York? That is 315 miles, just half of this distance.

Gen. TAYLOR. They are only allowed, I think, to make 6 miles an hour in the canal—I think it is 6 miles.

Mr. DEMPSEY. Of course, here you have a wider channel with no restrictions?

Gen. TAYLOR. Yes; the only restriction on the speed is the power of the boat.

Mr. DEMPSEY. Can they run 10 miles an hour?

Gen. TAYLOR. Undoubtedly in the good section of the river they can make 10 miles an hour.

Mr. DEMPSEY. Average that?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. Eight miles?

Gen. TAYLOR. No; I would say probably 6 miles would be nearer the average.

Mr. DEMPSEY. One hundred hours?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. It would take five days to make it?

Gen. TAYLOR. One way.

Mr. DEMPSEY. Ten days for the round trip. Aside from loading and unloading, they would make a trip three times in a month?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Carrying 22,800 tons; and if you made two trips instead of three trips?

Gen. TAYLOR. That would mean 50,000 tons a month, and for the eight months 400,000 tons.

Mr. DEMPSEY. What do you propose to use the money for the further improvement on?

Gen. TAYLOR. There is still another thing to take into consideration. When that project was adopted it was stated in the act adopting the project, "with a view to completion in 12 years." That was in the 1910 act. The Engineer Department assumed that as Congress, as stated in that act, adopted that project with a view to completion in 12 years, that it desired the project completed in that time and that the appropriations would be made at a rate necessary to do it in that time, and accordingly took steps to lay in a plant

suitable for the expenditure of the appropriations which we expected would be made. Since that time the appropriations have been less, a good deal less, than the rate necessary to complete the project in 12 years. Consequently we have a plant which has really cost more to obtain and which has cost a great deal more to maintain than we would have otherwise laid in.

Mr. DEMPSEY. Please tell us the average of the expenditures on that section of the river for the past five years.

The CLERK. \$919,238 for maintenance and improvement, and \$896,-580 for improvement alone.

Gen. TAYLOR. Just about half the money which was required to complete the project within the time stated by Congress. Consequently we are going ahead at about half the rate and it is costing us more than we expected, due to the larger plant which we have prepared and which is expensive to maintain. This estimate of \$1,930,000, plus \$70,000 for maintenance, making \$2,000,000, would be just the amount which would enable us to go ahead with the project at the rate Congress originally indicated it desired the project to be completed.

Mr. DEMPSEY. On page 1214 I see you state:

The traffic statement of 1919 shows a considerable decrease in tonnage, ton miles, and value. There were no through packets, nearly all the business being done by small boats and launches.

By referring to the statement which is just above that you find that to be the fact?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The itemized statement at the bottom of page 1214, as I understand it, shows the relative importance of the work in the order in which it is stated?

Gen. TAYLOR. That is so stated; yes, sir.

Mr. DEMPSEY. Maintenance of existing works, consisting principally of dams and shore protection, \$70,000; pipe line dredging, \$200,000; dipper dredging, \$30,000; rock excavation on Rock Island Rapids, \$150,000; Le Claire Canal, construction work, \$400,000. What is the nature of the construction work at the Le Claire Canal?

Gen. TAYLOR. In one section of the river the fall is so great that it is necessary to make a canal along the bank of the river and part of the work of that canal consists of a lock which is now under construction.

Mr. DEMPSEY. Dams and shore protections, construction and repair, \$1,010,000. Do you know how much of that is construction and how much repair?

Gen. TAYLOR. No, sir; I do not.

Mr. DEMPSEY. Then the other items are surveys and plant repairs. General, here is the situation: We all hope to see this experiment with this Government-owned but privately operated fleet a decided success, but there is nothing in the conditions there within a reasonable amount that would prevent or interfere with the experiment during the coming season, is there?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. Would not the wise and prudent thing be, then, to limit it so far as we can with the idea of increasing this appropriation when once we see the result of the experiment?

Gen. TAYLOR. Of course, a year from now we will know much better about the results of that experiment than we do now, but I think it is very desirable to have a good appropriation available so that we can do such work as is necessary during the summer to assist the operation of that fleet. The dredging, of course, on the worst shoals is necessary. By the repair or construction of some of the dikes and revetments, we may be able to materially assist the operation of the fleet, and with reference to the improvement of the channel I would like to say that I think, as far as we have gone into the improvement of that river, it is a complete success; that is, where we have been able to obtain and maintain our 6-foot channel in all the reaches of the river, so far as I am aware, where the work has been completed, showing that the plan that was originally adopted is the proper plan. It is merely a question of money to carry it out.

Mr. DEMPSEY. You have on hand \$310,000. Suppose we appropriate \$1,000,000 in addition to what you have on hand.

Gen. TAYLOR. Very well, sir.

Mr. SMALL. Mr. Chairman, I want to make this suggestion, and if necessary, in the form of a motion, that both of these appropriations for the lower Mississippi from St. Louis down and from the upper Mississippi between St. Louis and Minneapolis, each be coupled with a condition conferring upon the Secretary of War the discretion to withhold the expenditure of the whole or any part of the appropriation until he receives satisfactory assurances that cities and towns along the route will provide suitable and satisfactory water terminals. That will simply impose upon him a discretion and will not be an arbitrary one. One of the difficulties in developing commerce on the Mississippi is the lack of terminal facilities.

Mr. DEMPSEY. That is, withhold it in his discretion.

Mr. SMALL. In his discretion. Even as progressive a city as Minneapolis has been backward.

Mr. DAVIS. And probably St. Paul, also?

Mr. SMALL. Yes.

Mr. DAVIS. St Paul is really more interested in this than Minneapolis.

#### NEW LANGUAGE.

Mr. SMALL. I think the imposition of that discretion in the Secretary of War will induce the chief of engineers to call the attention of these cities and communities to the lack of terminal facilities and will be very greatly in the public interest.

Mr. DEMPSEY. Do you second that motion, Mr. Davis?

Mr. DAVIS. Yes.

Mr. DEMPSEY. It is moved and seconded that a condition be inserted that the appropriations for the Mississippi, in its upper and lower stretches, be made upon the condition, to be stated in the bill, that the Secretary of War be authorized, in his discretion, to withhold the expenditure of the amount appropriated, or any part thereof, until he receives satisfactory assurances from the various communities along the river that they have provided or will provide, within a reasonable time, satisfactory terminals, including physical connection between said terminals and the railroads serv-

ing the respective communities, and will endeavor to effect interchange of traffic between the railroads and the waterway.

(The motion, being duly seconded, prevailed.)

Mr. DEMPSEY. Does that \$70,000 stand?

Mr. SMALL. Yes; that ought to stand.

Mr. DEMPSEY. General, let us take up next the Missouri River, Kansas City to the mouth. The estimate for maintenance is \$290,000, and for further improvements \$1,810,000, and you have on hand about \$200,000. What have you to say about that?

Gen. TAYLOR. The present project for the Missouri River from Kansas City to the mouth, which is the item under consideration, was adopted by the river and harbor act of July 25, 1912, which stated, "With a view to the completion of such improvement within the period of 10 years." In order that the project should be completed within 10 years would require an average appropriation of \$2,000,000, the project having been estimated to cost \$20,000,000. The estimate submitted, therefore, is in accordance with that provision in the 1912 act; that is, it is \$2,000,000, which is the average rate at which the money should be appropriated to complete the project in the time stated.

Mr. DEMPSEY. And it is with the design of carrying out what the Engineer Department understood to be the desire of Congress.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. General, there has been expended up until the present time something over \$17,000,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And there is practically no traffic.

Gen. TAYLOR. At one time there was, as you know, a company operating on the Missouri River—the Kansas City Navigation Co., I believe it was called. They put on the river a number of towboats and barges, building one or two of their towboats and purchasing the rest. The equipment, however, was not entirely suited to the navigation conditions. They operated, however, for several years, but at the beginning of the war their plant was taken over by the Mississippi-Warrior section and is now part of the plant which is being used on the Mississippi. So that there has been no navigation for the past two or three years; that is, no through navigation between St. Louis and Kansas City, due to the fact that these boats which were operated on that section, on the through run from Kansas City to St. Louis, were taken over by the Government and have not been replaced.

Mr. DEMPSEY. There never was any traffic to amount to anything. From 1915 to 1919 it has only been at any time a little larger than what is shown in the Book of Estimates, the highest being 217,000 tons, as appears from the comparative statement on page 1256.

Gen. TAYLOR. Yes, sir. You will notice that at that time the commerce was very much more valuable than it is now. That was largely through business of a general merchandise character. They carried all kinds of commerce and merchandise.

Mr. DEMPSEY. General, should there not be a deferring of any further improvements, largely, of maintenance on this river until the experiments on the lower and upper Mississippi have been made and we have the benefit of the facts we will learn from those experiments?

Gen. TAYLOR. I am inclined to think that would be the part of wisdom; yes, sir.

Mr. DEMPSEY. That being so, that would lead to the elimination of the \$1,810,000, and do you think that any part of the \$290,000 should be appropriated?

Gen. TAYLOR. Yes, sir; I think all of that \$290,000 should be appropriated, so that we can be sure that the work which we have already put in will not be lost entirely; otherwise, your work is likely to be lost and then if you do wish to continue the improvement in the future you will find that it will have reverted to the condition it was in before the work was started. You will notice in the report on page 1252 it is stated that in the improved localities, which aggregate about 135 miles in length, the channel is becoming fixed and there is a marked improvement in channel depth. In other words, the work which has been done demonstrates beyond question that the river can be improved and that we can obtain a 6-foot channel from Kansas City to St. Louis which will be available all the year around.

Mr. SMALL. At the bottom of page 55 of the annual report, under the paragraph, "Proposed operations," which specifies the manner in which the estimate is to be used, and under the item of maintenance and repair, there is the item, "Operation of snag boats, including repairs, \$65,000, repairs to existing dikes and revetment, \$225,000," which makes the \$290,000; and over on the next page, under the heading of "Other expenses," are included, "Ordinary repairs to floating equipment, \$75,000," and "Superintendence and office expenses, \$50,000," making \$125,000 additional, which, added to the \$290,000, would make \$415,000. I make that statement for the purpose of asking the question whether that additional \$125,000 for repairs and overhead is essential as a part of the maintenance charge.

Gen. TAYLOR. One of the items there is \$50,000 for superintendence and office expenses. A considerable portion of that superintendence would be the superintendence of contract work, and that \$50,000 is based on the supposition that we are going to get the \$1,810,000. If we do not have the \$1,810,000, the item of superintendence would be very largely reduced, or almost entirely eliminated so far as that goes. You will have some certain office expenses, but that item could easily be cut from \$50,000 to \$25,000, and the item of repairs to plant, if we are not going to have the \$1,810,000, could also be cut very largely. That could probably be cut in half at least.

Mr. SMALL. Then \$290,000 plus \$55,000—

Mr. DEMPSEY (interposing). Plus \$10,000 would be all we ought to do.

Gen. TAYLOR. No; we should have more than \$10,000, because you have to provide for your office expenses.

Mr. SMALL. According to your estimate for superintendence or overhead expenses and repairs, that will amount, as reduced, to \$55,000.

Gen. TAYLOR. I think the two items of \$125,000 at the top of page 1256 could be reduced to \$60,000; that would make a total of \$350,000, \$290,000 plus \$60,000, and that would reduce the appropriations for that section of the river from \$2,000,000 to \$350,000.

Mr. SMALL. It would reduce the estimate more than that.

Gen. TAYLOR. The estimate is \$2,100,000 for further improvement and for maintenance, and that would reduce it to \$350,000.

Mr. DEMPSEY. As I understand it, there is some considerable effort—a great deal more than has ever been made previously—being

made at the present time by owners of farming lands adjacent to the river to privately revet the banks and make them stable; that is true, is it not?

Gen. TAYLOR. That is correct; yes, sir.

Mr. DEMPSEY. And that is being done on a plan that appeals to the engineers as a feasible plan and a good one?

Gen. TAYLOR. The plan is entirely practicable for certain locations of the river and will undoubtedly protect the banks and fix the river for a considerable part of the distance between Kansas City and the mouth if applied intelligently, as it is apparently being applied at the present time.

Mr. DEMPSEY. And if that plan is carried out for a substantial part of the distance between the two points you have mentioned it would, in all probability, make this a stable river and confine it within its banks.

Gen. TAYLOR. For those sections, and it would result also in a very material decrease in the total cost to the Government for the improvement of the section of the river from Kansas City to the mouth.

Mr. DEMPSEY. It would result also, if successful, in confining the river within its banks, in giving a stable stream.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. So that is one of the things that has a hopeful outlook so far as this river is concerned.

Gen. TAYLOR. Yes, sir. And there is still another feature to that plan and that is it would very greatly increase the value of the land along the banks of the river because it would prevent that land from being washed away and would thereby increase the crops which would be available for shipment on the river.

Mr. DEMPSEY. It would increase the traffic, in other words.

Gen. TAYLOR. Yes, sir. So that is a double benefit; that is, the fixing of the channel of the river and increasing the commerce to be carried on the river.

Mr. DEMPSEY. The plan of privately improving the banks of the river is something that has developed within the past year or so?

Gen. TAYLOR. It came to my knowledge within the last three or four months, and as far as I know all the experiments that have been made have been made within the last year or two at the outside. If an appropriation of \$225,000 is made, it will be understood that it is for the item shown on page 1255—that is, for repairs to existing dikes and revetment, with a view to preserving the permanent work that has heretofore been done.

#### MISSOURI RIVER FROM KANSAS CITY, MO., TO SIOUX CITY, IOWA.

Mr. DEMPSEY. The next item is \$15,000 for maintenance of the Missouri River from Kansas City, Mo., to Sioux City, Iowa. Do you think we should appropriate anything for that item or can it be deferred?

Gen. TAYLOR. That is purely a snagging operation and I do not believe the commerce would suffer very heavily if that were omitted.

Mr. DEMPSEY. Then there are two items in a group, the Osage River, Mo., \$15,000, for maintenance, and the Gasconade River, Mo., \$5,000, for maintenance. What have you to say about those two items?

Gen. TAYLOR. I think those should be allowed; they are both small snagging propositions and go up into a country which is largely dependent upon this for transportation.

Mr. DEMPSEY. Do you think they ought to be allowed at the amounts suggested, or can we make the amount \$15,000 for the two?

Gen. TAYLOR. No; I think they should be allowed as suggested.

OSAGE RIVER, MO.

Mr. DEMPSEY. The first item, the Osage, is a 3-foot proposition.

Gen. TAYLOR. It is a very light-draft proposition, but you will see that at the bottom of page 1273 it states:

With the exception of ties, which are mainly rafted, transportation is generally by light-draft towboat and barge method, the barges being loaded to a draft of 2 to 2½ feet.

Mr. DEMPSEY. What is the average of the expenditures on those two for the last five years?

Mr. MCGANN. \$6,150.

Gen. TAYLOR. It is more than that.

Mr. MCGANN. That is for maintenance, but they spent more for improvement.

Gen. TAYLOR. The new work would count also.

Mr. MCGANN. The total for maintenance and improvement on the Osage is \$11,580 and on the Gasconade \$6,413, making a total of \$17,993 for improvement and maintenance work.

Gen. TAYLOR. Nearly \$18,000 a year has been spent on those two streams.

Mr. DEMPSEY. That is, \$16,000 for maintenance. Suppose we gave you \$15,000?

Gen. TAYLOR. That would have to serve if that is all you give us.

Mr. DEMPSEY. Gen. Taylor, do you think there is anything in Mr. Curry's projects on which we should hear him?

RICHMOND HARBOR, CALIF.

Gen. TAYLOR. I think Mr. Curry would perhaps like to say something about Richmond Harbor.

---

SUNDAY, JANUARY 16, 1921.

**STATEMENT OF HON. CHARLES F. CURRY, A REPRESENTATIVE  
IN CONGRESS FROM THE STATE OF CALIFORNIA.**

Mr. CURRY. The local people at Richmond Harbor have \$480,000 in the Treasury waiting for an appropriation from Congress. They have spent over \$1,000,000 of their own money, nearly \$2,000,000 on certain work that is to be done in addition to the half-and-half proposition with Congress. I believe there is \$318,000 due from Congress and \$318,000 from the local people, and they have \$480,000 in the Treasury now. This provides for \$100,000, and, of course, the quicker the project is completed the less money it will cost.



Mr. SMALL. The estimate is \$200,000 for this year.

Mr. CURRY. The money is in the Treasury waiting to meet any appropriation made by Congress, and that work ought to be completed as soon as possible. The commerce in San Francisco Bay is congested; there is not wharfage enough to take care of the commerce, and the easiest and best way to accommodate it would be by making this inner harbor at Richmond completely available. It is right across the bay from San Francisco. Richmond is an industrial city and is filled with manufacturing establishments.

Mr. DEMPSEY. How large a place is Richmond?

Mr. CURRY. There are about 25,000 people there. There is not room enough in Richmond for the people to live there who work there, a good many of them living in Berkeley and Oakland. There is street-car connection.

Mr. SMALL. Do you want to say anything about the Sacramento River?

Mr. CURRY. Nothing, unless you intend to cut the appropriation. We need everything that has been requested this year, because you must remember we have had four dry seasons out there and this has been a wet year; there have been exceedingly heavy rains and snow, and we will need the money this year to maintain the navigability of the river, keep the snags out, keep it dredged, etc. The general can tell you about that.

#### CUMBERLAND RIVER, TENN. AND KY., BELOW NASHVILLE.

Mr. DEMPSEY. The next item is on page 33, for the Nashville district, Cumberland River, Tenn. and Ky., below Nashville; \$300,000 is suggested for further improvement, and it appears that on December 1 there was \$237,000 on hand and \$3,000 in outstanding contracts. What do you say about that, Gen Taylor?

Gen. TAYLOR. The project for the Cumberland River below Nashville provides for six locks and dams. It has been dragging along for a long time and should be completed as soon as practicable in order that we may get advantage of the money that has already been spent. There is no particularly large commerce at the present time, but that is due to the fact that the improvement has not been completed. Lock A is completed, Locks B, C, and D are nearly completed, and Locks E and F are only partially completed, being 35 and 25 per cent completed, respectively.

Mr. DEMPSEY. Locks A and B have improved navigation for the portion of the river covered by them?

Gen. TAYLOR. That is correct; yes, sir.

Mr. DEMPSEY. And that will be true of all the locks when completed?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you propose to use this money for?

Gen. TAYLOR. For continuing the work on Locks E and F, or the two lower locks.

Mr. DEMPSEY. Your itemized statement appears on page 1284. Will that complete it? It carries \$100,000 for Lock E and \$90,000 for Lock F.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I see that the tonnage is 223,000, of which 113,000 was sand and gravel and 46,000 railroad cross-ties.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Making only 63,000 tons of other freight. What has been the average expenditure on this project for the last five years?

The CLERK. \$327,685 for improvement and maintenance, nearly all of it being for improvements. There has been \$1,269 a year for maintenance.

Mr. DEMPSEY. It appears that the total expenditures up to date have been \$3,386,000. This is very costly traffic to the United States, is it not?

Gen. TAYLOR. Yes, sir; but until the project is finished, there can not be much traffic.

Mr. DEMPSEY. Why can there not be just as much traffic for the parts that are improved?

Gen. TAYLOR. There could be for the parts improved, but there is no traffic that originates on those parts. It would be a through traffic, except, of course, for that sand and gravel, which really do not amount to much. However, if there were through navigation there, it would connect up with the navigation on the Ohio River, and then there would be some possibility of something developing.

Mr. DEMPSEY. Let us see where it is on the map.

Gen. TAYLOR. It looks as if Nashville had some hopes of having commerce from the statement that the city has promoted a bond issue of \$300,000 for the purpose of erecting a modern river terminal or warehouse building.

Mr. DEMPSEY. Where is that statement?

Gen. TAYLOR. Near the bottom of page 1283.

Mr. DEMPSEY. That is not for the Cumberland River alone, is it?

Gen. TAYLOR. Yes, sir; that is the only river that runs through Nashville.

Mr. DEMPSEY. As I understand it, this is a six-foot project. Do you think that this is a project which promises enough to justify an expenditure of \$1,300,000 to complete?

Gen. TAYLOR. I should not like to see it abandoned at the present time.

Mr. DEMPSEY. The amount expended is very large.

Gen. TAYLOR. That is correct, but the project is already nearly three-fourths completed, and we have practically no benefit from the work which has been done. I think it would be unwise to stop the work where it is.

Mr. SMALL. It is impossible to develop the traffic until the project depth is secured?

Gen. TAYLOR. That is true.

Mr. DEMPSEY. You have your project depth from Nashville up to Lock E, have you not?

Gen. TAYLOR. No, sir; it is downstream. It runs from Nashville down.

Mr. DEMPSEY. It goes where?

Gen. TAYLOR. It goes from Nashville down to Locks B, C, and D.

Mr. DEMPSEY. That is about one-half the distance, is it not?

Gen. TAYLOR. It is about halfway, approximately.

Mr. DEMPSEY. There is no great center beyond Lock D, or beyond that and the end of the improvement, is there?

Gen. TAYLOR. No, sir; there is practically nothing between Nashville and the mouth of the river.

Mr. SMALL. It empties into the Ohio just above the mouth of the Tennessee.

Mr. DEMPSEY. It empties into the Ohio near Paducah. It is either going to be a local traffic, in which case you are just as well off as you will be for about half the distance, or else it will be a traffic connected with the Ohio River. That is all there is in the proposition, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Will you be able to do business with the Ohio River with a 6-foot channel?

Gen. TAYLOR. Some; yes, sir.

Mr. DEMPSEY. What is the controlling depth of the Ohio where the Cumberland connects with it?

Gen. TAYLOR. The point where the Cumberland River connects with it is in the section included in the project for the improvement of the Ohio, which will have a 9-foot depth at low water.

Mr. DEMPSEY. Your work in the Ohio at the point where the Cumberland connects with the Ohio is not completed, and will not be completed for a considerable time?

Gen. TAYLOR. It is not completed; that is correct. At the same time there is more water in the Ohio, even in its unimproved condition, than in the Cumberland in its unimproved condition.

Mr. DEMPSEY. What is it in the Ohio at the junction point?

Gen. TAYLOR. It is somewhere about 3 feet at extremely low water in the river.

Mr. DEMPSEY. What is it in the Cumberland River?

Gen. TAYLOR. Six inches.

Mr. DEMPSEY. The waterway, so far as the Cumberland is concerned, leads to Nashville, which is the center, and does not lead anywhere the other way except into the Ohio?

Gen. TAYLOR. That is right; yes, sir.

Mr. DEMPSEY. General, what are you expecting to transport from Nashville or intermediate points on the Cumberland River down to the Ohio?

Gen. TAYLOR. General trade between Nashville and points on the Ohio, as, for instance, Cincinnati.

Mr. DEMPSEY. How far is it from Nashville to Cincinnati by rail and how far by these two rivers?

Gen. TAYLOR. The mouth of the Cumberland is about as far from Cincinnati as it is from Nashville, and from Nashville to the mouth of the Cumberland is about 200 miles. That would make it about 200 miles further, apparently, by river than by rail.

Mr. DEMPSEY. About what is the total distance by rail?

Gen. TAYLOR. It is probably between 300 and 400 miles.

Mr. DEMPSEY. About once and a half as far?

Gen. TAYLOR. Approximately once and a half as far.

Mr. DEMPSEY. Do you think that some appropriation should be made for this?

Gen. TAYLOR. I do; yes, sir.

Mr. SMALL. Congress will have to complete this project, and it is only a question of how much should be appropriated at this time.

Mr. DEMPSEY. It will not complete it unless it is appropriated for.

Mr. SMALL. Congress ought to provide appropriations for its completion.

Mr. DEMPSEY. What do you think ought to be done in this bill?

Mr. SMALL. General, what is the least amount that can be properly and economically used for essential work until the next river and harbor bill?

Gen. TAYLOR. I should say half of that amount, or \$150,000.

CUMBERLAND RIVER, TENN. AND KY., ABOVE NASHVILLE.

Mr. DEMPSEY. Will you point out in a very short way what difference there is in the stretch of river below Nashville and that above Nashville?

Gen. TAYLOR. I do not know that I quite understand what the question is.

Mr. DEMPSEY. What is the difference between the two stretches of river? You have another stretch in there.

Gen. TAYLOR. There is none, practically. Congress first adopted a project for the improvement up to Nashville, and in 1919 Congress adopted the project for the improvement above Nashville. There is no reason in the world why it should not all be one project, so far as that goes.

Mr. DEMPSEY. It is a new project, and there has been nothing done on it yet?

Gen. TAYLOR. Very little.

Mr. DEMPSEY. You had \$270,000 cash on hand on the 1st of December and \$66,892 in outstanding contracts?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What were the outstanding contracts for?

Gen. TAYLOR. I do not have the details of them with me.

Mr. DEMPSEY. That includes 21 locks?

Gen. TAYLOR. No, sir; that was the original project, and that project has been abandoned. That table of locks and dams given at pages 1286 and 1287 was the old project which was abandoned, and the new project provides for 18 locks and dams.

Mr. DEMPSEY. It is a 6-foot project?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What was the previous project for, or for what depth?

Gen. TAYLOR. That was for a somewhat lesser depth than is now provided for. I do not remember that.

Mr. DEMPSEY. This \$300,000 estimate is shown at the bottom of page 1290, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And is for the construction of Locks 8 and 9?

Gen. TAYLOR. It is working toward the construction of Locks 8 and 9; yes, sir. Those locks were each estimated to cost between \$750,000 and \$800,000, so that the two would cost in the neighborhood of \$1,500,000. We have had appropriated \$345,000, and this

appropriation of \$300,000, therefore, would not even complete one of the locks.

Mr. DEMPSEY. Taking into account the situation of the Treasury and the high rates of taxation, do you think anything ought to be appropriated besides \$5,000 for maintenance there?

Gen. TAYLOR. I do; yes, sir. I think it is more important that the work should be continued on the project below Nashville for this reason: That project is well along toward completion and can be completed with reasonable appropriations in a very few years. The other project is one that has just been started on, and a delay on that project, therefore, will not be as important as a delay on the project below Nashville.

Mr. DEMPSEY. Would not the completion of the project below Nashville and your experience with that show whether or not it would be practicable and of benefit to navigation?

Gen. TAYLOR. The conditions are slightly different, and, in fact, they are considerably different. The traffic below Nashville leads from Nashville, which, in itself, is a good sized city, to the Ohio, and that connects with other large cities. The river above Nashville extends into northern Tennessee and into Kentucky, and into a section of country which is probably worse off for railroad facilities than any section in the United States at the present time. It is a large farming country, and it produces a large amount of timber or could produce a large amount of timber and its products, but there is absolutely no way of getting it to the outside world at the present time.

Mr. DEMPSEY. What do you think is the least amount, in addition to the \$5,000, that should be allowed?

Gen. TAYLOR. The work which is estimated to be done on Lock E, which is one of the locks uncompleted, is \$160,000, and if it must be cut down, I suggest that \$160,000 as the amount to be allowed.

Mr. SMALL. That is above Nashville?

Gen. TAYLOR. Below Nashville. I thought you were talking about both of them together.

Mr. DEMPSEY. Should there be any appropriation in addition to the \$5,000 for the project above Nashville?

Gen. TAYLOR. I think if you cut it down, you might as well cut it all out.

Mr. DAVIS. Including the \$5,000?

Gen. TAYLOR. No; leave in the \$5,000. I think it is a question of going ahead there at a reasonable rate or not at all. It is not economical to spend money in dribblets. We really get very little in the amount of completed work and we spend a good deal of money in overhead expense—there is a higher cost for everything we use.

#### TENNESSEE RIVER ABOVE CHATTANOOGA.

Mr. DEMPSEY. The next item is the Tennessee River above Chattanooga, where \$30,000 is asked for maintenance. There seems to be a reasonable amount of traffic there, both in tonnage and in value?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you think as to the \$30,000, General?

Gen. TAYLOR. There has been considerable improvement done on the Tennessee River above Chattanooga, and the amount which is esti-

mated, \$30,000, is merely the amount which is estimated to maintain the existing improvements and care for the plant. It is not expected to go ahead with any further improvement work at the present time.

I should say that the whole project of the improvement of the Tennessee River is under consideration at the present time by virtue of authority given in the last river and harbor act, which provided for a preliminary examination and survey of the Tennessee River. That was broad authority and under that we are making a complete investigation of all the conditions of navigation, power development, and all related subjects on the Tennessee River. I hope when that report comes out, which will be some little time yet, it will be a comprehensive report covering the whole subject so it will place before Congress the subject of navigation on the upper Tennessee River.

Mr. DEMPSEY. In the meantime should items for further improvement go on?

TENNESSEE RIVER, CHATTANOOGA TO RIVERTON.

Gen. TAYLOR. That is the upper Tennessee, particularly, of which I am speaking. The next item, \$1,392,000, is toward the construction of two locks and dams which have been authorized below Chattanooga.

Mr. DEMPSEY. There, again, we have a traffic very small in comparison with the amount which has been expended, nearly \$5,000,000.

Gen. TAYLOR. That is also correct, but you must remember that money has been expended on the Tennessee River distributed over a very long time. It has been a great many years that we have been working on the Tennessee and a considerable portion of that expenditure has been for maintenance. The great difficulty with navigation on the Tennessee River has existed at three or four different places, particularly at the Muscle Shoals section where work is now being carried on the high dam, which is for power development and navigation purposes, which is being built in connection with the nitrate plant. That dam when completed will improve the worst section of the river. There are two or three other places above that dam where navigation is obstructed by rapids, and the estimate which is submitted now is for carrying on work on two dams which have heretofore been authorized and commenced at another series of rapids.

Mr. DEMPSEY. Let us see what the project is, anyway?

Gen. TAYLOR. You mean the depth?

Mr. DEMPSEY. Yes, sir.

Gen. TAYLOR. Six feet.

Mr. DEMPSEY. For 24 miles, and throughout the remainder of the section, 3 feet.

Gen. TAYLOR. That is the section above Chattanooga. This item is for the section below Chattanooga—Chattanooga to Riverton.

Mr. DEMPSEY. What you propose to do is to complete the work on the lock at Widows Bar, \$238,000; and the abutment there, \$180,000; purchase of materials for the bar dam and preparations for its construction, \$200,000; and the construction of the Bellefonte lock, \$724,000. Does this have any effect besides on navigation; does it create any power?

Gen. TAYLOR. No, sir. We attempted to build a high dam in that section, but we found that it was going to flood so much country that

we had to give it up. Congress authorized us to build a high dam there, a power-developing dam, or two low dams. We could not find anybody that was sufficiently interested in the development of power, and as the high dam would cost more we finally adopted the too low dams. Under any circumstances, Mr. Chairman, I think you ought to give us money enough to finish up the work which we are already undertaking—the lock and abutment for the Widows Bar Dam, for which the estimate is \$418,000.

Mr. SMALL. That would complete the Widows Bar Dam?

Gen. TAYLOR. No; that would complete the lock and abutment, leaving the dam in between to be completed later, but it would at least save the work which we have already done.

Mr. SMALL. Mr. Chairman, that would seem to be quite essential.

The improvement of the Tennessee River is quite encouraging. The present tonnage on the river is 1,015,477 tons; that is the total tonnage. Considering the conditions on the river, the fact that it is navigable only in sections, and that there can be no other commerce, offers a very encouraging indication. In addition to navigation and the prospective commerce, there is a question whether water power at some of the points on this river, and in this case water power and navigation, can be and should be contemporaneously provided.

I think the Tennessee River is well worthy of completion and that we ought to appropriate in this bill, having due regard for economy, some sum which will provide for some further specific improvement, as, for instance, the work toward the completion of the lock and dam at Widows Bar, which Gen. Taylor estimates will cost \$418,000. That is only about one-third of the estimate.

Mr. DEMPSEY. As offsetting the question of tonnage you have an expenditure of considerably over \$8,000,000. Let us take the real projects and see what the expenditures have been, projects where they have tonnage.

Gen. TAYLOR. In figuring the \$8,000,000 you should take into consideration, Mr. Chairman, the fact that that river was improved 50 or 60 years ago and that for a long time it did carry considerable commerce. The \$8,000,000 is the accumulated amount of all the expenditures on the river.

Mr. SMALL. I will add that the present commerce on the river shows a total valuation of \$23,385,000.

Mr. DEMPSEY. Compare the 1,000,000 tons and the \$8,000,000 expenditure with, for instance, Boston, where we have spent \$12,500,000 and where you have an annual tonnage of 8,000,000 tons. Take the Pollock Rip Shoals, which we were discussing in the earlier stage of the report—they have only spent \$443,000, and 20,000,000 tons pass through it annually.

Gen. TAYLOR. There is a project which we have only been working on two or three years; we have just begun the improvement of that channel.

Mr. DEMPSEY. Taking it right through and comparing the amounts expended with the amount of traffic, it does not seem to me, to put it mildly, to make any great subject of congratulation or even, I am afraid to say, of hope.

Mr. SMALL. I do not think that the chairman makes a fair comparison, because we might take San Francisco Harbor, with a tonnage of

7,000,000 tons, where we have only spent altogether \$725,000. These projects have to be considered in the light of the engineering difficulties to be overcome and the cost of same in order to open them up to navigation.

Gen. TAYLOR. It would be just as fair in talking about the railroads to take all the money spent for original construction and maintenance. That is what the \$8,000,000 means, it means that you have spent \$8,000,000 for original construction and maintenance since the project was first started. There is one section on that river, Muscle Shoals Canal, which was finished, I do not know when, but in the seventies sometime. At that time it did a real business.

Mr. DEMPSEY. In making your estimate of \$418,000 can you use the \$258,000 on hand?

Gen. TAYLOR. No; the \$418,000 is in addition to the amount on hand.

Mr. DEMPSEY. I know, but can you use the \$258,000 to help make it up?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. What will you do with the \$258,000?

Gen. TAYLOR. The \$258,000 will go toward partially constructing the locks and the \$418,000 will go toward the completion of the construction of the locks and abutment on the other side of the river.

It is very much cheaper for the Government now to give us money to complete the lock, while we have a plant installed and a force on the ground, than it would be to suspend work, dismantle the plant, and to later go back and reestablish the plant, collect the working force, and start the work over again. I am putting \$418,000 as the minimum, which I think ought to be given absolutely.

Mr. SMALL. You mean \$416,000?

Gen. TAYLOR. No; \$418,000.

Mr. SMALL. While everybody recognizes the necessity of economy in this bill, we ought to, at the same time, endeavor to be fair in the description of these various projects. You can not possibly compare all the projects over the country, which are under improvement, upon the basis of cost. A river may be worthy of improvement where the expense is very great and another river no more worthy where the expense is very little. The cost depends upon the physical difficulties to be overcome.

Mr. DEMPSEY. While I think the policy of the Government should be a little broader and more comprehensive than that of a private company, the latter would take into account the return on the investment, I do not think that policy should be so broad as to permit a cost out of all proportion to the traffic to be developed.

Mr. SMALL. That is true, but applying that proposition to the Tennessee River, all the evidence seems to justify the statement that the traffic to be developed will justify the estimated expenditure. When you add to that water power which may be developed contemporaneously you are adding an asset to the wealth of the country which is simply an additional value to the improvement.

Mr. DEMPSEY. I understood the General to say that these improvements do not contemplate any water power?

Gen. TAYLOR. No, sir; the Widows Bar Dam and the Bellefonte Dam are low dams.



Mr. DAVIS. You have abandoned the high dam?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. That is true as to some.

Gen. TAYLOR. Of course, the dam at Florence is a high dam and will develop a very large amount of power, and another dam is to be built on the head of the Wilson Dam pool, which will also be a high dam and develop power. The Widows Bar Dam has a lift of only 8 feet and that would not be a practical power proposition.

Mr. DEMPSEY. It would not develop over three or four horsepower per cubic foot, if it did that—no; it would not develop anything like that.

Gen. TAYLOR. It would develop in the flood of the river eight or ten thousand horsepower, but that would be so small compared with the cost of the installation and the cost of the wires and other connections to use the power, that it would not pay to develop it.

Mr. DEMPSEY. Of course, the project has been adopted, and, I suppose, that we must proceed upon that theory, unless Congress expresses itself to the contrary, that it is going to be carried out.

Mr. DAVIS. Ultimately?

Mr. DEMPSEY. Yes, sir. The question with us is taking into account the financial situation, this being practically new work, what we think should be done this year.

Mr. SMALL. This reduction below the estimate was just a little more than about one-third of the estimate and constitutes such a drastic reduction that it seems to me at least that amount should be allowed.

Mr. DEMPSEY. I was in hopes the general could get along with making this \$258,000 a part of the \$418,000, appropriating the difference.

Mr. SMALL. You will observe there are other uses for that balance.

Mr. DEMPSEY. That would make an appropriation of about \$150,000.

Gen. TAYLOR. I am afraid it would leave—in fact, I know it would leave—the work on the locks in an incomplete state, which would be very disadvantageous. As I just stated, it costs a good deal of money to begin work on a project of that kind. You have your plant to install, your working force to collect and organize, and then when you discharge your working force and dismantle your plant there is a good deal of extra expense there. If you do that two or three times during the course of the construction of your dam, you will add very much to the cost of it. We have arrangements made and money sufficient to partly complete the locks and I think the least you should give would be the amount necessary to complete this lock.

Mr. DAVIS. General, is this contingent upon or connected with the Muscle Shoals proposition?

Gen. TAYLOR. This is between the Muscle Shoals Dam and Chattanooga.

Mr. DEMPSEY. What do you say about appropriating \$238,000?

Gen. TAYLOR. If the amount of \$238,000 is appropriated, I would understand that was based upon the estimate on page 1301, the first item of which is \$238,000, for the completion of the lock at Widows Bar.

Mr. DEMPSEY. What is the situation there with regard to getting 6 feet? As I understand, there are two other dams that have to be completed before you get the 6 feet.

Gen. TAYLOR. At all seasons of the year; yes.

Mr. DEMPSEY. What are the other two dams?

Gen. TAYLOR. One dam is at the head of the pool which will be formed by the Wilson Dam, the dam which we are now constructing for furnishing power, and then there will be a relatively inexpensive dam a little further down the river, near the Florence Bridge, which will also be necessary in addition to these two dams here, the Widows Bar Dam and the Bellefonte Dam.

Mr. DEMPSEY. General, did the engineering department allot anything to the Tennessee River from the \$12,000,000, and if so, how much and to what item?

Gen. TAYLOR. No, sir; there was nothing allotted.

Mr. SMALL. Nothing to this section, but you allotted \$75,000 below Riverton.

Gen. TAYLOR. Yes; to the section below Riverton we allotted \$75,000, but nothing to the section you are considering now.

Mr. DEMPSEY. General, the Muscle Shoals section is a separate section of the river, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And before we get any benefit from the dams in this section of the river, those dams in the Muscle Shoals section will have to be completed, will they not?

Gen. TAYLOR. Before you can get through navigation for the entire year; yes, sir. You will get some benefit from these locks, in that you will have a bad shoal improved.

Mr. DEMPSEY. You will not get your project depth, will you?

Gen. TAYLOR. No, sir; the project will not be completed.

Mr. DEMPSEY. And what is the condition as to the two Muscle Shoals locks?

Gen. TAYLOR. The Wilson Dam is under construction, and if we get the money for which we have submitted an estimate this year, and our future appropriations, it will be completed inside of three years. That will improve the worst section of the Muscle Shoals.

Mr. DEMPSEY. Then what about your other dam?

Gen. TAYLOR. Then to complete there will still be another dam to be constructed at the head of the pool formed by the dam which is now under construction. There is, however, a limited navigation through the section just above the Wilson Dam pool by the old canal which was finished something like 40 years ago. The locks are too small and the depths are not sufficient to give good navigation. It is 5 feet through the old canal, so that you have a 5-foot navigation.

Mr. DEMPSEY. There really will not be any great injury or any considerable injury to navigation if these locks in the other sections of the river are completed when the locks in the Muscle Shoals section are completed.

Gen. TAYLOR. If the work could all be finished simultaneously, it would be a very great advantage beyond any question, but Congress, I am afraid, will not appropriate at any time sufficient money to enable us to carry on work at all the different places at the same

time. The lock and dam, for instance, at the head of the Wilson Dam pool will be quite an expensive dam to construct, and when that is under construction it probably will take about all the money that Congress will be willing to appropriate in any one river and harbor bill.

Mr. DEMPSEY. About how much will that lock cost?

Gen. TAYLOR. I do not know what that will cost. I have not the data at hand, but it will be expensive. I would like to add also that while it will be an expensive dam to construct, it will also develop a large water power which, probably, by the time that dam is completed, there will be a market for, and if so, there will be a good interest on the investment, whatever it may be.

#### TENNESSEE RIVER BELOW RIVERTON.

Mr. DEMPSEY. Let us take up the next item, the Tennessee River below Riverton. What do you say about that, General?

Gen. TAYLOR. That is a project that provides for 6 feet navigation by open channel work, rock excavation and dredging and contraction. It is about 76 per cent completed. The worst shoals have already been improved, I will say. The channel has been very much improved. This estimate which is now before you, \$194,000, is the amount estimated as required to complete that section of the river. The section is 226½ miles long.

Mr. DEMPSEY. The detailed estimate is at the bottom of page 1312, \$144,000 for operation and repair of two dredges; 12 months' maintenance of completed channels, \$20,000; reconstruction of floating plant, \$30,000; and engineering and contingencies, \$20,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Is this a lock-and-dam proposition?

Gen. TAYLOR. No, sir; simply a dredging proposition. There has been a great deal of rock excavation. It is rock and gravel mostly, so that when it is once excavated it does not fill very rapidly. There is some maintenance work required, but relatively a small amount.

Mr. DEMPSEY. Where is this section of the river?

Gen. TAYLOR. It extends from Riverton to the mouth.

Mr. DEMPSEY. General, do you think you can get along with something less than the full amount?

Gen. TAYLOR. We can not finish that section; no, sir. It was expected that the money that was appropriated two or three years ago would complete it, but on account of the increased cost of the work we were not able to finish it.

Mr. DEMPSEY. You have \$89,000 on hand?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. For what do you expect to use that?

Gen. TAYLOR. That will be for the operation of the two dredges and attendant plant until the end of the fiscal year, and then the amount that is now asked for will continue the operation of that plant for about one year, which we expect will finish that work.

Mr. DEMPSEY. Which would be the more important, to grant this \$194,000 or to increase the \$238,000 in the last item to \$418,000?

Gen. TAYLOR. I think I should rather see this \$194,000 appropriated, because that will enable us to finish up something and get it off

the books, and we would not have to come back and ask you for more money on that section.

Mr. DEMPSEY. And the other item is substantially the beginning of new work?

Gen. TAYLOR. Yes, sir.

#### OHIO RIVER, GENERAL OPEN CHANNEL WORK.

Mr. DEMPSEY. The next item is the Ohio River, and for further improvement, general open channel work, \$585,575 is estimated. What do you say about that?

Gen. TAYLOR. That is based on experience as to the amount which is necessary to maintain the plant which we operate on that river, for the purpose of maintaining an open channel until such time as the project for locks and dams is completed. When the lock and dam project is completed it will no longer be necessary to do the bulk of the work which is being done under this improvement at the present time.

Mr. DEMPSEY. What has been the average expenditure on general open channel work for the past five years?

Mr. McGANN. \$119,204 for maintenance and \$96,828 for improvement.

Mr. DEMPSEY. That makes how much?

Mr. McGANN. \$216,032.

Gen. TAYLOR. The details of the estimate are given at the top of page 1376, and you will see that one of the principal items there is for the purpose of changing one of the snag boats into a dredge, \$150,000.

Mr. SMALL. Nothing was allotted for that open-channel work in the last bill?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. Suppose we added \$150,000, which is to be used for the conversion of that boat, to the \$200,000 and granted \$350,000—that would give you your average for five years and give you the money with which to convert that boat.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And you could probably get along all right with that, General?

Gen. TAYLOR. That would be fairly satisfactory.

#### OHIO RIVER, CONSTRUCTION OF LOCKS AND DAMS.

Mr. DEMPSEY. The next item is for locks and dams and I see you have on hand in cash \$2,100,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And in outstanding contracts, \$3,500,000, in round figures.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Making \$5,500,000 altogether. Under those circumstances, what is the least you think you can get along with until the end of the fiscal year 1922?

Gen. TAYLOR. I think if we are to make any reasonable progress we ought to have the \$5,000,000.

Mr. DEMPSEY. Suppose you were not going to get that, what is the least you could get along with?

Gen. TAYLOR. The work we do depends entirely on what we get. There are a certain number of locks and dams to be built on the river and it takes anywhere from two to five years, and in the lower river it may take even more than that, to build a dam. We can not make a contract for a dam, for instance, unless we have the money available for the completion of that lock and dam; that is, we can not make a contract for any amount in excess of that we have available. The practice on the Ohio River has been to let a contract for the complete lock and dam, because it requires a large and expensive plant to carry on the work, and it adds very greatly to the expense to let a number of contracts for the same kind of work. We have been considering the question of letting contracts separately—that is, one contract for the lock and abutment, which is shore work, and one contract for the dam—and even then it will take two or three years to finish each one of those parts. We do a part of this work by hired labor and there, of course, it is not necessary for us to have all of the amount on hand for the completion of the lock and dam, but it is better to have a fairly good amount when we start, because we have to lay in a large plant ourselves, an expensive plant, and in order to do the work economically, we ought to be able to proceed with it as rapidly as the water conditions will permit.

If you should cut that item down to any extent, it would simply mean slowing up the work on that improvement; if you cut it down very much, we would not be able to start any new locks and dams at all, and that would mean a very considerable delay in the completion of the improvement.

Mr. DEMPSEY. What has the average been for the last five years?

Mr. MCGANN. \$4,091,000.

Mr. DEMPSEY. On locks and dams alone?

Mr. MCGANN. Yes, sir.

Gen. TAYLOR. And that has been regulated by the fact that the appropriations for 1917 and 1918 were each \$5,000,000, and in 1919 the appropriation was only \$3,000,000. Out of the amount which was appropriated by the 1920 act we first allotted \$500,000; then we found it was necessary to make another allotment, and we subsequently allotted—

Mr. DEMPSEY (interposing). Was that for the construction of locks and dams or for open-channel work, or for both?

Gen. TAYLOR. For the construction of locks and dams. We subsequently allotted \$773,000, making a total allotment out of the \$12,000,000 appropriation of \$1,273,000, and then later we made still another allotment of \$100,000, making \$1,373,000 that we allotted out of the \$12,000,000.

Mr. DEMPSEY. In proportion to what this bill will carry, \$2,500,000 or \$3,000,000 will be about what we could allow, would it not?

Mr. DAVIS. And then Congress will meet next December.

Gen. TAYLOR. Mr. Davis, our working season on the Ohio River is in the early fall. Money that is appropriated at this time will have to be for the work that we do this fall, the fall of 1921, and practically for the work that we do in the fall of 1922.

Mr. DAVIS. Have you not enough funds on hand to continue work this fall?

Gen. TAYLOR. We have enough to continue some work, but we can not start any new work. If we do not have an appropriation now it means delay of two years in the work.

Mr. DAVIS. I have heard of emergency bills being passed.

Gen. TAYLOR. But they have never given us any for river and harbor work, so far as I know.

Mr. DAVIS. If we appropriated \$5,000,000 would you let any contracts between now and the first of the next season?

Gen. TAYLOR. We undoubtedly would.

Mr. DAVIS. I am very much in hopes that the cost of this work will change inside of the next six or eight months.

#### NEW LANGUAGE.

Mr. SMALL. I wish to move a proviso to that appropriation, and that is to leave the expenditure of the money discretionary with the Secretary of War, dependent upon receiving assurance that plans are being made looking to the construction of adequate terminals at the several cities and towns where they are needed in order to carry on the commerce, and I call attention to the fact that in the rivers and harbors act approved March 2, 1919, the appropriation for the Ohio River contained a provision directing the Secretary of War "to investigate and submit to Congress, on or before the 1st day of January, 1920, a report showing what progress, if any, has been made toward providing satisfactory and adequate public terminals at the several cities and towns located on the Ohio River from December 1, 1918, to December 1, 1919, inclusive." Based upon that, a report was submitted on December 30, 1919—House Document No. 561, Sixty-sixth Congress, second session—in which it is substantially stated that no work of construction has been begun on any large terminal, but assigning as one reason therefor the high cost of materials and the uncertainty of navigation in the incomplete state of the slack-water improvement.

The board of engineers that considered the matter stated that the existing terminals are only moderately satisfactory. There can be no question but that Congress will complete this improvement of the Ohio River in accordance with the report heretofore adopted, and now that conditions are getting toward normal, I think it is time for those people to understand that something should be done along the line of establishing terminals.

Mr. DEMPSEY. I understand you want to make the same motion as to the Tennessee River?

Mr. SMALL. Yes.

(The motions were put and carried.)

#### ALLEGHENY RIVER PA., OPEN-CHANNEL WORK.

Mr. DEMPSEY. What do you say about the item of \$10,000 for open-channel work on the Allegheny River?

Gen. TAYLOR. I think that should be given.

Mr. DEMPSEY. And do you need the entire amount?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That seems to be for a stretch of the river which does not carry a heavy amount of traffic.

Mr. SMALL. How do you explain separate statements of traffic as between open-channel work and lock and dam improvements?

Mr. DEMPSEY. They are separate sections of the river, are they not?

Gen. TAYLOR. This, probably, is above the lock and dam project.

Mr. SMALL. It is all one river, though.

Gen. TAYLOR. Yes; but most of the work is above the lock and dam project.

Mr. DEMPSEY. The existing project is for the improvement of the open channel from the mouth to the New York State line, 214 miles, by the removal of bowlders and snags and the construction, where needed, of low dams and dikes, and I notice no further new work is contemplated. I see that the items are set out on page 1358, \$3,000 for repairs to Pithole Dam; \$1,000 for repairs to Cowanshannock Dikes; \$1,000 for bank patrol and inspection; and \$5,000 for the removal of bowlders, snags, and other channel obstructions. That seems to be a shallow part of the river.

Gen. TAYLOR. It is, and it is relatively unimportant, but still there is some business on it.

Mr. DEMPSEY. Do you think we ought to leave that in or not?

Gen. TAYLOR. Yes, sir; I think it had better be left in.

#### ALLEGHENY RIVER, PA., CONSTRUCTION OF LOCKS AND DAMS.

Mr. DEMPSEY. Under further improvement, there is an estimate of \$500,000 for the construction of locks and dams. Tell us about that, General.

Gen. TAYLOR. The navigation on the lower end of the Allegheny River for a long time has been held up by the bridges at Pittsburgh, and the 1919 act provided that no part of the appropriation then made should be expended until the channel spans of the bridges forming unreasonable obstructions to the navigation of the Allegheny River at Pittsburgh had been modified as directed by the Secretary of War. That matter has been very vigorously taken up and arrangements have been made such as to warrant the Secretary of War in going ahead with the improvements. One of the worst bridges has already been razed and arrangements have been made for the razing of others, so that with those bridges razed, there is no reason why a very large and important navigation should not develop on that river. Whether it will equal the navigation on the Monongahela or not, I do not know, but it certainly will be a very important navigation. The lock and dam project has been undertaken—

Mr. SMALL (interposing). Before you leave the matter of bridges, may I ask a question? Have the railroads owning those bridges, the removal of which has been ordered, indicated a disposition of compliance or are they still combating the Government?

Gen. TAYLOR. One of the railroad bridges has already been razed; the bridges which have not yet been razed are those owned by the city and we have been pressing the city in every way possible to make

them carry out plans for the razing of the bridges which have already been approved by the Secretary. They have already made all the assurances and made the plans, and everything of that kind, so that it is now simply a question of getting the work done.

Mr. SMALL. So the remaining bridges which have yet to be razed are only those belonging to the city of Pittsburgh?

Gen. TAYLOR. That is right, I think.

Mr. SMALL. One railroad bridge was razed and another destroyed by fire?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. What would be the objection to making this appropriation absolutely conditioned upon the razing or alteration of those bridges? The razing or alteration of those bridges has been under consideration and the first order for the same was made when Mr. Taft was Secretary of War; is not that correct?

Gen. TAYLOR. It has certainly been, I think, as far back as that; yes, sir.

Mr. SMALL. And certainly ample time has been given, and now that this money is for the improvement of a river in which the city of Pittsburgh is vitally interested, they should take steps to alter and raze the spans of those bridges. What would you think of an absolute condition attached to any appropriation that was made?

Gen. TAYLOR. I think it would be a very good scheme to have a condition attached to it that the money should not be available until the raising of the bridges had been actually commenced and assurance is given that they will continue the work of raising them. Simply making plans would not help very much. They are holding it up now upon the ground that they have not the money with which to do it, but, at the same time, they are submitting plans for approval of two or three other bridges that will cost a good deal of money.

Mr. DEMPSEY. Why should not a condition be attached, just as was done in the case of the Niagara River, that the money is to be available when the bridges have been raised in accordance with the requirements of the War Department?

Gen. TAYLOR. If the work could be carried on simultaneously, it would be of material assistance.

Mr. DEMPSEY. Make it available when the work has been commenced, or when the work of raising the bridges has been commenced, or when security in some form acceptable to the Secretary has been given that they will prosecute the work with reasonable diligence to completion. That security should cover the raising of the necessary funds by the city.

Gen. TAYLOR. And the allotting of them for that purpose; yes, sir.

Mr. DEMPSEY. With that condition, what would you say as to the amount?

Gen. TAYLOR. I think it should be given.

Mr. DEMPSEY. Considering the slow moving of municipal corporations, do you not think that we would be perfectly safe in giving half the amount estimated in this bill?

Gen. TAYLOR. Yes, sir; I think so. I think it would be just as well.

Mr. DEMPSEY. Mr. Davis, do you move that the suggestion of Gen. Taylor be embodied in the appropriation?



Mr. DAVIS. I certainly do.

Mr. DEMPSEY. And do you second it, Mr. Small?

Mr. SMALL. Yes.

Mr. DEMPSEY. Then it is unanimously carried at \$250,000. I see that you have a very large amount on hand there now, General.

Gen. TAYLOR. Yes, sir; that has been due to the fact that the thing was held up for some time.

Mr. DEMPSEY. The only question in my mind is whether we should appropriate any additional sum. What do you think of that?

Gen. TAYLOR. I think you should appropriate something in order to attach the proviso to it.

Mr. SMALL. I suppose you could attach the proviso to what is available as well as to what is appropriated.

Gen. TAYLOR. I should not like to have that done, because that might be tied up in the other work in a way that we could not stop it.

Mr. DEMPSEY. How about the item of \$6,000 for the Pittsburgh Harbor?

Gen. TAYLOR. That is simply for supervision of the harbor and for maintenance.

Mr. DEMPSEY. It is essential?

Gen. TAYLOR. Yes, sir.

---

MONDAY, JANUARY 17, 1921.

GRAND MARAIS HARBOR, MINN.

Mr. DEMPSEY. Well, General, we have come to Duluth (Minn.) district, and we have a group of 10 items, for which maintenance appropriations are asked in the aggregate of \$224,000, and one item is asked for Keweenaw Waterway, Mich., for further improvement. The other items are Grand Marais Harbor, Minn., \$7,100; Agate Bay Harbor, Minn., \$2,000; Duluth-Superior Harbor, Minn. and Wis., \$53,500; Port Wing Harbor, Wis., \$2,000; Ashland Harbor, Wis., \$6,000; Ontonagon Harbor, Mich., \$11,900; Keweenaw Waterway, Mich., \$110,000; Marquette Bay Harbor of Refuge, Mich., \$1,500; Marquette Harbor, Mich., \$5,000; and Grand Marais Harbor of Refuge, Mich., \$15,000.

Now, all of these harbors seem to have a large amount of tonnage, with the exception of Grand Marais Harbor, Minn., which has only 8,400 tons; Port Wing Harbor, which has only 3,000; Ontonagon Harbor, which is only 3,000; and Grand Marais Harbor of Refuge, which has only a thousand tons. Now, the first question is whether you think those that I have named, with the small tonnage, should have appropriations.

Mr. DAVIS. For maintenance?

Mr. DEMPSEY. For anything.

Gen. TAYLOR. For maintenance; yes, sir.

Well, you take the first one, Grand Marais, Minn. There is an appropriation of \$7,100 asked, with only 8,000 tons' tonnage. But here is a statement as to why that is needed, page 1401:

With the exception of repairs to 108 linear feet on the east breakwater made in 1919, only minor repairs have been made since the east breakwater was

completed in 1883. The appropriations and allotments for the harbor have amounted to only \$8,000 since 1910.

In other words, it has been 10 years with practically nothing done, and very little done since 1883. So that the average for maintenance is almost negligible and the breakwater has reached such a condition that something ought to be done or it is going to pieces. Now, that same condition pretty much exists with the breakwaters on all those lakes.

Mr. DEMPSEY. I have two cases right in my district, Wilson and Olcott, where the breakwaters and piers are disintegrating, absolutely gone to pieces, the stone being washed out. There will not be anything left in a little while. Of course, we have not had any tonnage in those harbors of late years.

Gen. TAYLOR. If I am not mistaken, they want the Olcott Harbor piers repaired so that visitors can walk out on them. That is all there is to that. It is a good place to fish, I think.

Mr. DEMPSEY. Yes; they have really a very large amount of pleasure craft there. Now, the question in my mind is, as to these items, whether the disposition is, as has seemed to be in cases in my district, to abandon these harbors that have a nominal business.

Mr. SMALL. It is frequently very difficult to compare harbors or even rivers as to the amount of commerce. Sometimes a small harbor serves in a peculiarly local and valuable way a community that has no other service, and it would seem unjust to that community for the Federal Government to abandon it simply because the commerce is small. Many branches of railroads in the United States are unprofitable, yet to a certain extent they are feeders of the main line, and as to the locality they serve they are invaluable.

Mr. DEMPSEY. Now, this, of course, is the test of these small items, General, not tonnage?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. It is very small, indeed.

Mr. SMALL. There is this to be said about Grand Marais Harbor. According to the report they have no rail connection.

Mr. DEMPSEY. Where is that?

Mr. SMALL. That is under "Terminal facilities," page 1401. It is a harbor of refuge, and during the year 1919 there were 19 boats, tugs, and tow barges, that sought it for refuge.

Mr. DEMPSEY. Where is that?

Mr. SMALL. Page 1402. Under those circumstances I think the harbor ought to be maintained, and the only question is what is the least sum?

Gen. TAYLOR. I would suggest cutting that in two. That will give them something.

Mr. DAVIS. Just simply say \$3,500?

Gen. TAYLOR. \$3,500.

Mr. DEMPSEY. Now, I think we can take the rest of the small ones.

#### AGATE BAY HARBOR, MINN.

Gen. TAYLOR. The next one is \$2,000, and you have 7,000,000 tons.

Mr. DEMPSEY. That is all right. That undoubtedly should be granted. There is no question about that as to the amount?

Gen. TAYLOR. No, sir.

## DULUTH-SUPERIOR HARBOR, MINN. AND WIS.

Mr. DEMPSEY. Now, your next is \$63,500, with very large tonnage.

Mr. DAVIS. Forty-two million tons.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Let us see what it is needed for.

Gen. TAYLOR. Repairs to breakwaters and piers. That is itemized on page 1410, at the top of the page.

Mr. DEMPSEY. I see you have \$57,000 on hand, and \$6,000 apparently December 1 in outstanding contracts.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Taking that into account, could we cut that \$63,000?

Mr. TAYLOR. I do not think you could; no, sir.

Mr. DEMPSEY. Of course that is a very large harbor. I think it would be a mistake to try to pare that, do you not, Mr. Small?

Mr. SMALL. I rather think it would be.

Mr. DAVIS. The tonnage is so enormous, and I will say from my personal knowledge that it is bound to increase.

Gen. TAYLOR. Yes; and the facilities are none too large.

Mr. DAVIS. It is bound to double in the next 10 years.

Mr. SMALL. Before you leave the Duluth-Superior Harbor I would like to call the attention of the committee to the situation there as to terminal facilities. Under the paragraph "terminal facilities," at page 1408 in the annual report, there is this to the effect that the harbor frontage is owned as follows: Railroad companies about 22 per cent, private individuals or corporations 27 per cent; less than 1 per cent by municipalities. The point I had in mind to suggest was that there should in some way be called to your attention the necessity of a municipal terminal.

Gen. TAYLOR. In that particular case I do not see what will be accomplished by a public terminal. The harbor of Duluth-Superior is provided with the most up-to-date and efficient plant that has been devised in this country or in the world for handling coal and ore, and the companies owning the plant operate it in the most economical way. No plant which the city could put in could reduce the cost of operation, and if the city built a plant it would be necessary for them to make a charge for commodities handled by that plant, and it would probably increase the cost of operation rather than decrease it.

## PORT WING HARBOR, WIS.

Mr. DEMPSEY. General, let us group Port Wing Harbor with a commerce of only 3,000 tons; Ontonagon Harbor, with a commerce of only 3,000 tons; and Grand Marais Harbor of Refuge, with a commerce of only a thousand tons, and let us see what you say about those three. Is the Grand Marais Harbor and the Grand Marais Harbor of Refuge practically the same?

Mr. McCANN. One is in Minnesota and the other is in Michigan.

Mr. DEMPSEY. Do they not join?

Mr. McCANN. No, sir.

Mr. DAVIS. Which one of those is in Minnesota?

Mr. SMALL. The top one.

Gen. TAYLOR. At Port Wing the only work that is proposed to do with the money for which the appropriation is asked is for the betterment to the floating plant and purchase of material for doing a small amount of work on the breakwaters and piers. That item could probably be deferred.

ONTONAGON HARBOR, MICH.

Now, as to Ontonagon, unless the commerce of Ontonagon Harbor is going to be seriously interfered with, it will be necessary that an appropriation be made for the maintenance of that harbor. But the commerce as indicated by the report is small.

Mr. DEMPSEY. It has varied slightly, but it has been less than 5,000 tons since 1915.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And that is practically fish and logs.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. A fishing port and logging port?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The estimate is for the removal of shoals and for pier repairs. Can you tell us about what the kind of vessels are that they have going in there? I see the channels were operated in 1915, except 75 feet. The project is 98 per cent completed. The project is for a channel 150 feet wide by 17 feet deep over the bar, and 100 feet wide and 15 feet deep between the entrance piers, and two short channels 75 feet wide and 15 feet deep leading from the inner end of the Government piers to the principal wharves on each side of the river. So it is a 15 to 17 foot project.

Gen. TAYLOR. Yes, sir. Twelve feet is the greatest draft of vessels.

Mr. DEMPSEY. Now they have abundant draft there so if we do not remove any shoals for them they will not be suffering any.

Gen. TAYLOR. It shoals quite rapidly, however.

Mr. SMALL. Have they any railroads in that community?

Mr. TAYLOR. Yes, sir.

Mr. DEMPSEY (reading) :

By following a circuitous route to the west tugs and small craft can enter in quiet weather drawing 12 feet. The harbor is at present closed to all vessels of over 6-foot draft in rough weather.

That is in "condition at end of fiscal year," on page 1419.

Gen. TAYLOR. Yes, sir.

Mr. SMALL. I should think some appropriation should be made there in view of the condition of the harbor.

Mr. DEMPSEY. Suppose we make the appropriation \$5,000, General; how would that do?

Gen. TAYLOR. All right, sir.

GRAND MARAIS HARBOR OF REFUGE, MICH.

Mr. DEMPSEY. The next of these smaller items is the Grand Marais Harbor of Refuge, Mich. That, I see, General, is a 22-foot project, 22 feet at the entrance channel, between piers 18 and 20 feet.

Gen. TAYLOR. That is a harbor of refuge. You will notice a statement at the top of page 1435.

Mr. SMALL. While the commerce is small, they had no rail connection. Twenty-four vessels sought the use of the harbor as one of refuge in 1919, and the condition seems to be fair.

Gen. TAYLOR. Note also the paragraph on the effect of the improvement on page 1433.

Mr. DEMPSEY. I see it is stated there that no rail connection exists; that the harbor has been one primarily of refuge; and that it has been of benefit to commerce in that way. That has a controlling depth, I see, General, of 15 feet, in the harbor now.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, what is the size of boats that use that?

Gen. TAYLOR. The draft of vessels using the harbor is from 6 to 20 feet.

Mr. DEMPSEY. I see at the top of page 1435—what I am trying to get at, General, is this: They seem to have pretty nearly the project depth in the harbor, as I get it from "Conditions at the end of the fiscal year," and the description of the project on page 1432.

Gen. TAYLOR. The project provides for 20 feet, and you have got 15.

Mr. DEMPSEY. Eighteen to 20.

Gen. TAYLOR. Eighteen feet at the harbor end, and 20 feet at the lake end, so that you are certainly 3 feet short, and may be 5 feet short.

Mr. DEMPSEY. I see in the table, page 3851—this may be limited by the limitations of the harbor—that the greatest draft of the vessels was 15 feet. That may be entirely due to the fact that that is their limit.

Gen. TAYLOR. That is the best they can do. They can not go in there drawing more water than there is in the channel.

#### KEWEENAW WATERWAY, MICH.

Mr. DEMPSEY. What about the Keweenaw Waterway, Mich.?

Gen. TAYLOR. The Keweenaw Waterway is a cut-off channel across the Keweenaw Point. It avoids travel in the open water to Lake Superior in passing between certain sections of Lake Superior. Suppose you have a northerly storm. A vessel comes up under Keweenaw Point, and instead of turning and going out around the Keweenaw Point she can cut across into Lake Superior and very much shorten the distance she has to travel.

Mr. DEMPSEY. What is the project depth?

Gen. TAYLOR. It is the same as the channels on the Great Lakes, generally 20 feet or 21 feet.

Mr. DEMPSEY. Has it shoaled? Is that the object of the estimate?

Gen. TAYLOR. It has shoaled somewhat, but this is more particularly for the repairs to the piers at the entrance, page 1424 and at the top of page 1425. It is nearly all repairs to the piers, which have very badly deteriorated.

Mr. DEMPSEY. Well, that is very simple. Of course that is necessary at the entrance to a great waterway.

Gen. TAYLOR. Yes, sir. The tonnage runs up into a million tons a year.

Mr. DEMPSEY. On that group, then, we will put that \$190,000 for maintenance and \$10,000 under the further improvements, making \$200,000 in all.

Mr. DAVIS. What do those include?

Mr. DEMPSEY. The whole group there.

Gen. TAYLOR. It includes all of those beginning at the top of the page.

#### WARROAD HARBOR AND RIVER.

Mr. DEMPSEY. Now, General, the next items are for very small harbors again.

Gen. TAYLOR. There are three in that.

Mr. DEMPSEY. The third one has a fair tonnage?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The first two seem to stand on an entirely different basis from the third, and as to the third the amount suggested is nominal.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Let us look at the \$5,500 for Warroad Harbor and Warroad River.

Gen. TAYLOR. Both of those first two items, the first two improvements are on Lake of the Woods.

Mr. DEMPSEY. Now, where is Lake of the Woods?

Gen. TAYLOR. It is at the northern end of the State of Minnesota.

Mr. DEMPSEY. That is partly in Canada.

Gen. TAYLOR. That is partly in Canada. It is on the boundary line between the United States and Canada.

Mr. DEMPSEY. I see the details of the \$5,500 are given on page 1438, operation of U. S. dredge *Warroad*, \$1,900; care and maintenance of floating plant, \$1,380; hydrographic survey, \$200; purchase of orange-peel bucket equipment of snag boat *Oriole*, \$1,500; and administration and office expenses, \$520. The project is for an 8-foot channel within the harbor, with a turning basin, and a jetty. The project is 76 per cent completed, I see.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I see the controlling depth was 4.3 feet. What do you say about that?

Gen. TAYLOR. Well, the commerce is not very large, but it is a rather important harbor. It is the only harbor on the lake which has railroad connections.

Mr. DEMPSEY. Well, do you think something ought to be granted?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. How much?

Gen. TAYLOR. I would suggest half that amount.

Mr. DEMPSEY. \$3,000?

Gen. TAYLOR. \$3,000.

#### ZIPPELL BAY, LAKE OF THE WOODS, MINN.

Mr. DEMPSEY. The next is \$2,000 for Zippell Bay, Lake of the Woods, Minn., with a tonnage of 410 tons.

Gen. TAYLOR. That hardly seems justified, considering the amount of commerce.

Mr. DEMPSEY. That had better go out; we had better mark it deferred?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, the next is a comparatively large harbor with a small amount that had better be granted?

Gen. TAYLOR. Yes, sir.

ST. CROIX RIVER.

Mr. DAVIS. General, this project was adopted under the act of Congress of 1912, and under that the project was \$136,000, according to the estimate. They concluded the project a few years ago at an expense of \$150,000, and since then they have just simply been keeping it repaired by taking out snags and other obstructions, and for the last two or three years there has been no snagging done, and the people are anxious to have snagging done there, and at least \$3,000 is needed.

Mr. DEMPSEY. General, can you tell us about that?

Gen. TAYLOR. That statement is corroborated by the statement in the report, which states that—

The appropriations for maintenance during the three years have been small, and the channel above Stillwater has deteriorated, due to sunken logs and the formation of sand bars, and a ruling depth of 2 feet at mean low water now obtains. Logging operations have now ceased. However, many of the logs are now being removed, which in itself will improve conditions. Below Stillwater the project depth of 3 feet is available.

While the logging work which has been done by private interests on the river will improve conditions, the probabilities are that a small amount spent by the Government—\$2,000 or \$3,000—would materially assist in restoring the project depth sooner than would be done by the private operations and would remove snags which, I understand, are obstructions to boats running on the river.

Mr. DEMPSEY. What would you suggest—\$2,000?

Mr. DAVIS. I think you had better make it \$2,500. I think that would be satisfactory.

Gen. TAYLOR. \$2,500 would be sufficient, undoubtedly.

Mr. DAVIS. Stillwater is a place of 10,000 or 12,000 and has five or six large sawmills. Taylor Falls is an active place, and has no special railroad connections that I know of.

Mr. DEMPSEY. Where do you put that?

Gen. TAYLOR. Under maintenance.

Mr. DAVIS. I am going to say for the record that ultimately this great harbor of Duluth-Superior is going to be connected with the Mississippi River through this St. Croix River channel. That, of course, we can not consider. That is under a different committee. But ultimately that is going to be done. Four-fifths of the coal that supplies the Northwestern States, coal for which we now pay exorbitant prices, is going that way, and furthermore, there is going to be a lot of tonnage in iron ore coming down through there instead of going through the other way, and it will benefit us.

Mr. DEMPSEY. Can not coal go up as well as down?

Mr. DAVIS. It goes to Duluth-Superior, and then we have to haul it all by rail, at a total of very high prices.

Mr. DEMPSEY. I understand Iowa has produced coal.

Mr. DAVIS. Yes; but not the quality of coal that is shipped up there.

MENOMINEE HARBOR AND RIVER, MICHIGAN AND WISCONSIN.

Mr. DEMPSEY. We next come, General, to the Milwaukee, Wis., district. There is a whole page of items grouped there.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And there are only two appropriations for further improvements, the rest being maintenance items, aggregating \$345,000. Now, suppose we just take those up in succession. General, can you tell us in a very brief way what you think should be done with them? The first is on page 1345.

Gen. TAYLOR. Generally all of those harbors require maintenance each year to remove shoals which are formed during the winter and early spring by the storms. We have a dredging plant in the Milwaukee district which we send around to these different harbors to remove the shoals as rapidly as possible in the spring. We originally tried to do it by contract, but we found that it was impossible to do it that way because the contractor would go into a harbor and stay there until he finished all the work there as it was more economical for him to do it that way. But we shift the plant around from one place to another to meet the exigencies of navigation, so as to give the greatest benefit in the least time possible. They are all pretty much the same, Mr. Chairman. The shoaling and repairs to the breakwaters all are needed, and I think that you could lump the whole of them and take them all as a lump, and we could perhaps shorten it.

Mr. DEMPSEY. Let me see. The only things that seem to require special attention, as far as I can see, are Port Washington Harbor, Wis., \$3,000. That is 615 tons.

Gen. TAYLOR. I would suggest omitting that.

Mr. DEMPSEY. Now, we will take the larger items in the list. Take \$28,000, \$59,000, \$36,000, \$25,000, \$45,000, and \$116,000. Now, let us take those, skipping all the rest of the smaller items. Take, first, Menominee Harbor and River, Mich. and Wis. Let us see what that is.

Gen. TAYLOR. That is for a small amount of dredging and for completing the repairs to the outer end of the south pier.

Mr. DEMPSEY. I see. That is at the bottom of page 1458. That first item seems to be something that will have to be done.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Repairs to the outer end of the South Pier, that is almost all of the item.

Gen. TAYLOR. Yes, sir; that is the principal part of the item.

Mr. DEMPSEY. Page 1450 gives the details on Menominee Harbor and River.

GREEN BAY HARBOR, WIS.

Now the details on the next item, the Green Bay Harbor, are given on page 1454, or at the top of page 1457?

Gen. TAYLOR. Yes, sir.



Mr. DEMPSEY. The two principal items are for rebuilding a revetment?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the purchase of a scow, is it, the next item?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Those are the two things?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. It gets right down to the question in that harbor whether you can do that work any cheaper, at the somewhat lower prices?

Gen. TAYLOR. It is necessary to have the scow in order to work the dredge efficiently. There is some plant but the scows are old and rotten, and ought to be discarded.

Mr. DEMPSEY. And we ought to rebuild the dike?

Gen. TAYLOR. And we ought to rebuild the dike. So I do not think it is anything that should be deferred.

Mr. DEMPSEY. The next is Fox River, Wis., \$36,500, and the items are at the top of page 1464. Under that is the operation of three dredges.

Gen. TAYLOR. Three small dredges. That is for the purpose of restoring the channel which has been allowed to deteriorate, if you will read the paragraph just below the estimate.

Mr. DEMPSEY. I do not see the comparative statement of commerce.

Gen. TAYLOR. It is given at the top of page 1465.

Mr. DEMPSEY. The average cost of maintenance has been only about \$8,000, but you have not attempted to maintain the project depth during the war.

Gen. TAYLOR. No, sir. You see that during the last year the commerce has nearly doubled.

Mr. DEMPSEY. I see the commerce, however, General, is almost entirely in one section of the river. The details are shown at page 5863. That is the lower part of the river.

Gen. TAYLOR. That is right.

Mr. DEMPSEY. Is that where it is expected to do the work?

Gen. TAYLOR. That is where it is expected to do the work; yes, sir.

#### STURGEON BAY AND LAKE MICHIGAN SHIP CANAL, WIS.

Mr. DEMPSEY. The next is Sturgeon Bay and Lake Michigan Ship Canal, Wis., \$25,000. Now, the details of your estimates are at the bottom of page 1467 and top of page 1468, are they not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And it is for the operation of a dredge and for the repair of canal revetments?

Gen. TAYLOR. Yes, sir.

#### KENOSHA HARBOR, WIS.

Mr. DEMPSEY. That I see is quite a large harbor with quite a large commerce. The next three items are small items, and we next come to Kenosha Harbor, Wis., \$45,000. That is for the operation of a dredge, and rebuilding the breakwater and piers?

Gen. TAYLOR. Yes, sir. That is another harbor at which the breakwaters have been allowed to deteriorate. You see they have been there for years, and very little work has been done on them.

WAUKEGAN HARBOR, ILL.

The next is Waukegan Harbor, Ill., \$116,500. I see the details there are—

Gen. TAYLOR. Are exactly the same.

Mr. DEMPSEY. Take those maintenance items on the whole, they figure \$245,000. Do you think that it would be safe to call that \$200,000?

Gen. TAYLOR. I think so.

Mr. DEMPSEY. What do you say as to that, Mr. Small?

Gen. TAYLOR. Not that I would not like to see the whole amount given, but in view of your desire to cut down, I think that that is possible.

Mr. SMALL. How about the two items for further improvement?

MILWAUKEE HARBOR, WIS.

Mr. DEMPSEY. Milwaukee Harbor, improvements to the outer harbor, \$175,000.

Mr. SMALL. I would like to ask a question about that.

Mr. DEMPSEY. Go ahead.

Mr. SMALL. That is for the construction of a tug.

Gen. TAYLOR. That could be omitted.

Mr. DEMPSEY. That item?

Gen. TAYLOR. Yes, sir. That can be omitted for the reason that we got a boat from the Shipping Board that we transferred to Milwaukee.

Mr. SMALL. Referring to Milwaukee, the report under the paragraph "Terminal facilities," reciting the facilities which exist, expresses the opinion that they are inefficient. I had understood that the municipal authorities of Milwaukee or some commission had made plans for the construction of a modern terminal and that it had been authorized.

Gen. TAYLOR. I do not know what the status of that project is, but I know that the city of Milwaukee is actively taking up the development of the outer harbor, and has prepared plans for terminal facilities which will be up to date terminal facilities.

Mr. SMALL. What steps have been taken toward the construction of the terminal?

Gen. TAYLOR. They have employed an engineer to devise the plans and prepare the plans, and they submitted the plans to the River and Harbor Board for suggestion, and we made some suggestions for modifications of these plans, which we thought would improve them. What steps have been taken toward financing this development I do not remember. But it is the intention, I am quite sure, of the city to go ahead and make this development as rapidly as possible.

Mr. SMALL. Milwaukee has a large and growing commerce, and in view of that they certainly need this large modern terminal.

Gen. TAYLOR. Yes.

Mr. SMALL. Can any method be suggested by which their attention to this necessity can be drawn?

Gen. TAYLOR. They are fully alive to that fact, and the recommendation has been made, you will see, under "Recommended modifications of project," at the top of page 1491.

Mr. SMALL. Yes. Which, of course, is ready for action by Congress, although not within the jurisdiction of this subcommittee.

Gen. TAYLOR. Yes, sir; and that was all contingent upon their doing their share of the work.

#### RACINE HARBOR, WIS.

Mr. DEMPSEY. Mr. McGann, suppose you read to the committee a short letter from Mr. Roper concerning the Racine item.

(The letter referred to follows:)

RACINE, WIS., November 30, 1920.

HON. CHARLES A. KENNEDY,  
Washington, D. C.

MY DEAR KENNEDY: As you are chairman of the Committee on Rivers and Harbors, I write to inquire as to the prospects of waterway legislation during the session which begins in December, and also to urge that if you report a bill it shall include a provision for completing the "arrowhead" project at this city.

You remember that while I was a Member of the House appropriations were secured and a contract made to complete the project, and that after a very considerable amount of work on the south breakwater and pier had been done the contract was canceled and work stopped, a law having been passed authorizing such cancellations where the rise in the cost of materials, etc., threatened the contractors with large financial loss.

Ever since work was stopped there has, I understand, remained unexpended and available for use on the harbor a balance of \$90,000.

The north breakwater pier of the "arrowhead" is completed to the shore.

About one-half of the south breakwater pier had been completed when the contract was canceled as aforesaid.

Racine is justly entitled to have the work resumed and the project finished without delay. By the last census the city has a population of more than 58,400, the increase in the last 10 years being over 54 per cent. Considering its size, it is, as you know, a great manufacturing center, some of the plants having international reputations of the first class, and its annual output aggregating in value many millions of dollars.

You will remember that in our conversation in Washington last year I urged the justice and the necessity of completing the Racine "arrowhead," and that you agreed with me and said that so meritorious a project ought not to be left unfinished, but should, of course, be promptly completed, and that you would help as soon as possible to bring in a bill with the necessary provisions.

Please do what you can in this direction, and meanwhile write me as to whether your committee will bring in a bill at the short session, and also as to the probabilities and possibilities for Racine. \* \* \*

With all good wishes, I am, as ever,

Sincerely yours,

HENRY ALLEN ROPER.

Mr. DEMPSEY. Will you tell us, General, what is proposed to be done with the \$165,000.

Gen. TAYLOR. The conditions are this: The entrance to the harbor formerly had two parallel piers. It was found that when a heavy sea was on on the lake that waves would run up the entrance and cause damage to vessels lying at the docks. Also it was difficult to enter the harbor under these conditions. So a project was pre-

pared which provided for the construction of two breakwaters lying in that relative position [indicating] to the entrance. The project also contemplated the removal of the old piers, the idea being that when a wave comes through the new entrance there is ample room inside for it to spread out, and by the time it reaches the shore line the wave is so dissipated as to cause no trouble in the upper harbor. We have already constructed this breakwater.

Mr. DEMPSEY. To the westward?

Mr. TAYLOR. To the westward, one of them, and partially constructed the other. This work is completed, you see. Now, what remains to be done is this: Part of the removal of this old pier. It is very necessary that it should be done. This is the standard plan that we follow on the lakes now on similar projects.

Mr. DEMPSEY. Look over the item of costs, on page 1495, and see whether you think that \$165,000 can be reduced.

Gen. TAYLOR. I do not think it should, because in order that the work may be done we should be able to make one contract for the work in order to do it economically. If we are going to do it at all, we ought to have the full amount.

Mr. DEMPSEY. Well, with the amount of commerce there, there is not any question in your mind about the advisability of improving the harbor?

Gen. TAYLOR. None at all.

Mr. DEMPSEY. That changes our total for further improvements at the bottom to \$165,000?

Gen. TAYLOR. It omits \$175,000.

#### WHITE LAKE HARBOR, MICH.

Mr. DEMPSEY. Now, we have a long group of items in the Milwaukee district.

Gen. TAYLOR. Those are all small harbors—are all harbors on the east shore of Lake Michigan, under the Milwaukee office. The ones on the preceding page were on the west shore of Lake Michigan. The conditions on the east shore are almost identical to the conditions on the west shore.

Mr. DEMPSEY. Now, do you not think to begin with that the \$9,000 for White Lake Harbor, Mich., where they have a commerce of only 503 tons, could be deferred?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, your other items are all of them for places that have a considerable and some of them quite a large commerce, are they not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And it is just a question of whether those amounts are needed at the present time. That is all there is to it. Is not that true?

Gen. TAYLOR. They are all needed. The conditions are exactly similar on that shore of the lake to what they are on the other shore of the lake. Taking, however, the same attitude toward that estimate that you took toward the other, and reducing it approximately 20 per cent, you would reduce that to \$350,000. There is not a single item in there that ought not to be given just as it is. But as I say,

treating that the same as you did the other, and reducing it to \$350,000, would give a proportionate amount.

## LUDINGTON HARBOR, MICH.

Mr. DEMPSEY. Now, let us take the Ludington Harbor, Mich. There are two quite large items there, one for \$175,000 for maintenance, and the other for \$155,000 for further improvements. The details of that are on page 1530. It is a large harbor?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is apparently for building the breakwater?

Gen. TAYLOR. It is a reconstruction of the breakwater, which has deteriorated to a very dangerous extent.

Mr. DEMPSEY. The whole thing is bad, is it not?

Gen. TAYLOR. Yes, sir. The storms the past year have pretty nearly torn that to pieces.

Mr. DEMPSEY. You would call that an emergency proposition?

Gen. TAYLOR. An emergency proposition; yes, sir.

## MANISTEE HARBOR, MICH.

Mr. DEMPSEY. The next one is Manistee Harbor, \$14,500. The details are at the bottom of page 1526. That is new work for the completion of dredging in the basin.

Gen. TAYLOR. That could probably be deferred without serious harm.

Mr. DEMPSEY. That reduces the total, then, to \$55,000?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. That is the total for further improvement.

## CHICAGO HARBOR, ILL.

Mr. DEMPSEY. Chicago, Ill., district, page 39. The items are comparatively few and quite large, so I think we had better take them separately.

Chicago Harbor, Ill., \$70,000 for maintenance and \$188,000 for further improvement.

By the way, General, it is a curious fact, is it not, that Chicago Harbor has so small a tonnage as compared with Milwaukee, for instance? It is as small even as Manitowoc.

Gen. TAYLOR. Unless Chicago takes some active steps toward reclaiming its water-borne commerce, they will have such a loss as the years go by that they will be way behind the other harbors on Lake Michigan.

Mr. DEMPSEY. It seems to be classed with many small harbors.

Gen. TAYLOR. They prefer to use their water front for a park rather than for navigation purposes, rather than for wharves, and so long as they do that they must expect to see the water-borne business going somewhere else.

Mr. DEMPSEY. \$70,000 is estimated for maintenance of Chicago Harbor and \$188,000 for further improvements.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The details I see are at the bottom of page 1555. \$188,000 for the construction of the exterior breakwater. \$10,000 for

repairs to fire protection, \$10,000 for riprap protection for breakwaters, and \$50,000 for emergency repairs to existing piers and breakwater. Now, what do you say as to the present necessity of that work?

Gen. TAYLOR. The item for maintenance should undoubtedly be given. The item for further improvements is more doubtful. They have on hand \$186,000 unobligated and \$236,000 covered by contracts and outstanding liabilities. That will provide for a reasonable amount of work for the next summer. If this \$188,000 is appropriated it might or might not be put under contract before the end of the next season.

Mr. DEMPSEY. So there would not be any harm in deferring it?

Gen. TAYLOR. What will happen by a delay of a year, and possibly not as long as that, no one can tell. It is necessary that the work be done sometime. The condition is shown on this chart.

There was this old harbor, and then the outer breakwater. The city has built a municipal pier which cost them some \$4,000,000. In order that vessels lying at that pier may be protected from storms in this direction it is necessary to extend that southerly breakwater. They are now protected from the storms coming from the north, but with a storm coming from the south or east, the waves come around the end of this breakwater and cause a great deal of motion at that pier. This breakwater is under construction now. This is what the funds on hand will be used for.

Mr. DEMPSEY. But you think in view of the amount on hand that the \$70,000 should be granted, but that the \$188,000 can be safely deferred?

Gen. TAYLOR. I think that there will be comparatively little delay in the work; that is, if the money on hand will give a reasonable amount of work this next year. It was expected that this pier would be used for package freight boats. As a matter of fact, it has not been used very much by such boats. It shows the location of the pier here. This is an old map. It shows only one breakwater. It is not up to date. But the location of the pier is such that the package freight boats which it was expected would be used that pier prefer to come up the Chicago River when they run very nearly to the center of the business which they carry, so that the pier is not used to the extent that was anticipated, although it is used somewhat. This is a pleasure place out on the end of the pier.

Mr. DEMPSEY. Well, now, your next item, then, General, is \$200,000 for Calumet Harbor, Ill.

#### CALUMET HARBOR, ILL.

Gen. TAYLOR. That should unquestionably be granted.

Mr. DEMPSEY. What are the conditions there?

Gen. TAYLOR. The channel at that point, it was supposed, was completed. There is a section in it which is through a rock cut, and the vessels in going through that cut have torn up the rock so that they have had two or three bad accidents, and vessels using the harbor are not now able to draw the full draft. It is necessary, in order that the project depth of 20 feet may be obtained and main-

tained, to take out more of the rock than we have previously taken out. There are some large grain elevators there.

I was talking about the Calumet River. I see this is the Calumet Harbor.

Mr. DEMPSEY. Yes; Calumet Harbor. The details are found at the top of page 1563, and the items are \$120,000 for rebuilding in concrete about 12,000 linear feet of breakwater superstructure, \$20,000 for removing 300 feet of the north pier, including construction of lighthouse foundation, and \$50,000 for dredging if and where needed, and emergency repairs to existing piers and breakwaters.

Gen. TAYLOR. That is all for the repairs and reconstruction of the piers and improvements in the channel.

Mr. DEMPSEY. Well, now, what do you say as to the amount, General?

Gen. TAYLOR. I think that should be granted.

Mr. SMALL. That is, the item of \$200,000?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Will you need all of that?

Gen. TAYLOR. I think we will need it all.

Mr. DEMPSEY. Do you have on hand \$169,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You have your depth, apparently?

Gen. TAYLOR. Yes; we have the depth. It is not the depth so much as it is reconstruction of the breakwater.

Mr. DEMPSEY. What does this mean on the top of page 1562: "The north pier superstructure (completed in 1883) is in a dilapidated condition, but all except 400 feet of it forms a jetty to the Illinois Steel Co.'s plant, although that company has declined the use and maintenance of the pier"? Now, are not they the only ones who would use it; and if they are the only ones who would use it, we do not want to rebuild it, do we, at that point?

Gen. TAYLOR. That protects the entrance to the harbor—the entrance to the river.

Mr. DEMPSEY. The south pier is being rebuilt by the Iroquois Iron Co.?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. The entrance channel and the anchorage area of both are in good condition, the depth being in excess of 21 feet?

Gen. TAYLOR. There is a distinction there between breakwater and the pier. The pier is the structure which is built right along in here. That is not what we are proposing to repair. The work we are proposing to do is the work on the breakwater which protects the harbor. This is the breakwater [indicating]. This is the pier. The south pier, which is being rebuilt by the Iroquois Iron Works, is this, and then the north pier is along there [indicating], so that we are not doing anything on that. It is the breakwater on which the money is to be spent.

Mr. DEMPSEY. There is not anything said about the breakwater except in the estimates.

Gen. TAYLOR. It is right at the bottom of the page.

Mr. DEMPSEY. It is in good condition under water, but the timber superstructure is in bad condition, subject to damage by severe storms, which are gradually tearing it to pieces.

Gen. TAYLOR. Yes. The estimate is for rebuilding the timber superstructure with concrete, replacing it with concrete.

Mr. DEMPSEY. You think the full amount should be granted them, with \$169,000 on hand?

Gen. TAYLOR. Yes, sir.

CALUMET RIVER, ILL. AND IND.

Mr. DEMPSEY. The next item is Calumet River, Ill. and Ind.?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. All the commerce is included in the preceding item?

Gen. TAYLOR. That is the one that I just spoke about where we had so much difficulty recently.

Mr. DEMPSEY. Now, is the Calumet River used, distinguished from the Calumet Harbor, and does it have any large amount of tonnage?

Gen. TAYLOR. Yes, sir. Practically all the grain elevators that used to be in Chicago on the Chicago River have been transferred up there, and there is a very large business on the Calumet River. In fact, the whole of the grain business that was formerly on the Chicago River is now being shipped up the Calumet.

Mr. DEMPSEY. Well, now, the details of those two items are found on page 1567, near the bottom.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. \$160,000 is for the complete deepening of Rock Cut to full width of 200 feet?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And \$50,000 is for dredging?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, let us see, what width have you now at Rock Cut?

Gen. TAYLOR. The channel is 200 feet wide; that is the full width, and we are deepening 100 feet of the width of the full project depth. This year we attempted to make a contract for that work, but the conditions were so uncertain that we were not able to find any contractor who was willing to undertake that at a price that we were willing to give. An agreement was finally made by which local interests would guarantee the contractor against loss if he would take the contract at the price that we thought he ought to do it for—if he lost anything on that they are going to make it up. So it was under those conditions that we were able to make the contract.

Mr. DEMPSEY. I do not see where that Rock Cut is dealt with, unless it is under "conditions at the end of the fiscal year," which says that the actual controlling depth is 16 feet. Considerable shoaling has occurred at several places, although the greater portion of the channel remains 21 feet deep. Now, shoaling would not be of rocks, would it?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. Where do we find anything about this rock, completing the deepening of this Rock Cut to full width of 200 feet, unless it is at the bottom of page 1565 there?

Gen. TAYLOR. There is a reference to the Rock Cut at the bottom of page 1566, also on page 1565. I can tell you what actually hap-



pened, Mr. Chairman. The project was that the channel should be dredged to a depth to provide for vessels of 20-foot draft. It was dredged to slightly over 20 feet at low-water depth, assuming that that would provide for 20-foot draft. But what happens on Lake Michigan is in certain winds the water is blown out, just as at Buffalo, in Lake Erie, you have a variation of 10 or 12 feet at times due to the shifting of the wind, the water going as much as 5 or 6 feet below mean lake level and sometimes 5 or 6 above mean lake level. Similar conditions exist on Lake Michigan, where it seems that when the water is blown out it stays down sometimes for several days. In order to meet that condition it was decided that to provide for vessels of 20-foot draft the channel ought to be 23 feet in depth. Vessels of 20-foot draft or approximately that that in endeavoring to navigate that channel actually had their bottoms torn out by striking the rock bottom at the times when the water had been blown out below the mean lake level. We are now, as I stated, deepening one-half of the channel to 23 feet, and this money is necessary to deepen the other half to 23 feet. You have at Buffalo, for instance, a depth of 23 feet or more into the entrance to the harbor to meet a similar condition.

That is practically putting Calumet River on the same plane, giving it the same facilities as Buffalo and other Lake harbors have.

Mr. DEMPSEY. Well, do you think the two amounts, the full amounts are needed? I see you have a little over \$100,000 on hand—\$111,000.

Gen. TAYLOR. The \$50,000 that we are asking for is an insurance against possible shoaling. It might or might not be needed.

Mr. DEMPSEY. What about your \$160,000?

Gen. TAYLOR. The \$160,000 would undoubtedly do it.

Mr. DEMPSEY. Suppose we defer the \$50,000 and grant the \$160,000?

Gen. TAYLOR. It might be safe and might not; I can not say.

Mr. DEMPSEY. Well, in an emergency you could use part of the funds, could you not, for the purpose of maintenance?

Gen. TAYLOR. We could unless we had made contracts obligating all of the funds.

Mr. DEMPSEY. These are all in one class so that you could shift from one group to the other?

Gen. TAYLOR. Yes; we could do that.

Mr. DEMPSEY. Then, suppose we mark that \$50,000 out and leave the \$160,000.

#### INDIANA HARBOR, IND.

Mr. DEMPSEY. Let us take the next item, \$36,000 for Indiana Harbor, for maintenance and \$394,000 for further improvements. It is referred to on page 1568, and \$394,000 is for the completion of the breakwater project.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Is that something of immediate necessity, General?

Gen. TAYLOR. I think that should be done as soon as possible.

Mr. DEMPSEY. Now, General, could you show us what the work is that you contemplate doing?

Gen. TAYLOR. This is the north breakwater and here is the south breakwater. This is the proposed breakwater in here [indicating].

Work on that has been started and what is desired is the amount necessary to complete that breakwater.

Mr. DEMPSEY. For the protection of the harbor entrance?

Gen. TAYLOR. For the protection of the harbor entrance; yes, sir. This is under contract.

Mr. DEMPSEY. I see you have on hand there a very large amount.

Gen. TAYLOR. That is for the north breakwater, so that that is all taken care of. But the south breakwater is not.

Mr. DEMPSEY. What do you say as to whether, without disadvantage to the commerce of that river and harbor, with the present conditions, we could defer that \$394,000 for the present?

Gen. TAYLOR. I do not think it should be. I think it should be granted.

Mr. DEMPSEY. Well, do you not think that at any rate, in view of the conditions, a smaller amount should be granted in this bill?

Gen. TAYLOR. You might do that. Of course, it will probably be not as advantageous to us to let the contract for the smaller amount as it would for the larger amount.

Mr. DEMPSEY. Suppose we give you \$200,000 there?

Gen. TAYLOR. That would be all right.

Mr. DEMPSEY. What do you say as to that, Mr. Small?

Mr. SMALL. It is satisfactory to me.

Gen. TAYLOR. Then, there is \$36,000 for maintenance, also?

Mr. DEMPSEY. That should remain in?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. Indiana Harbor is an important harbor.

#### ILLINOIS RIVER, BELOW COPPERAS CREEK.

Mr. DEMPSEY. Now, the only other items on that page are Illinois River, Ill., below Copperas Creek, \$84,000 for maintenance and \$46,000 for further improvements.

Gen. TAYLOR. Yes, sir. I think both of those items should be allowed. You are probably aware of the fact that the State of Illinois has appropriated \$20,000,000 for the improvement of certain portions of the Illinois River or the Des Plaines River immediately below Lockport, to which point the Chicago Drainage Canal affords ample facilities for navigation to and from Lake Michigan. When the work which is being done by the State is completed there will be a good channel from Lake Michigan down to the section of the river which is being improved by the United States.

Mr. DEMPSEY. What depth?

Gen. TAYLOR. Eight feet. They have provided for at least 8 feet.

Mr. DEMPSEY. As I understand you, General, this project has no connection with the Drainage Canal, and will not increase the diversion, and the project could be maintained at project depth without the use of any water from the Drainage Canal?

Gen. TAYLOR. Absolutely.

Mr. SMALL. Additional water?

Mr. DEMPSEY. Without any water.

Gen. TAYLOR. If the flow of the water through the Drainage Canal was cut down to the amount allowed by the War Department, that is 250,000 cubic feet a minute, there would be ample water for any

navigation improvements which have been planned. The War Department permits provided for 250,000 cubic feet a minute, which means 4,167 cubic feet a second.

Mr. DEMPSEY. This work, General, is estimated at the bottom of page 1580 and consists of dredging.

Gen. TAYLOR. And care and repair of plant. That is what it is in general terms.

Mr. DEMPSEY. You think both of those items should be granted at the estimated amounts?

Gen. TAYLOR. I do.

Mr. SMALL. What progress is being made by the State of Illinois in the improvement of the Illinois River?

Gen. TAYLOR. They have let contracts for part of the work, and I think part of it is actually under construction.

#### ST. MARYS RIVER, MICH.

Mr. DEMPSEY. On page 40, the next item is for St. Marys River, Mich. There is no appropriation submitted.

Gen. TAYLOR. For St. Marys River I would like to ask an appropriation for maintenance.

Mr. DEMPSEY. How much, General?

Gen. TAYLOR. \$56,000. The conditions are these: The channel leading from Lake Superior to the St. Marys Falls locks is rather a narrow channel. It is dredged generally through the St. Marys River and through certain small expansions that are called lakes. There has been no maintenance work done on this channel for a long time, and last year we discovered that the sand creeping in at the sides had shoaled in a number of places. We did some maintenance dredging last fall, late in the fall, with the small allotment that was made from the 1920 act. But there still remain a number of places that we discovered where the channel is shoaler than the project depth and considerably narrower. It is necessary to take out these small shoals. I have details of work to be done at seven different places, totaling \$56,000. As it affects the whole commerce of 68,000,000 tons on the St. Marys River it is a very necessary thing to do. I know of no greater emergency elsewhere.

Mr. DEMPSEY. And you need that in spite of the fact that you have on hand \$300,000?

Gen. TAYLOR. Yes, sir; because that was appropriated specifically for the fourth lock. That money was appropriated for the fourth lock, and it can not be used for other purposes. It would serve just as well, if the committee were authorized to do it, to make that money which was heretofore appropriated for the construction of the fourth lock available for the maintenance of the St. Marys River generally, but under the law it is not now available. It is a question in my mind whether you want to make that money which was appropriated by the Rivers and Harbors Committee available for something for which it was not intended. If we could use the money that we already have we would not want any more money. The money which is available was appropriated specifically for the construction of the fourth lock, and that lock is now practically completed. The balance of the funds will not all be needed for that work. Sufficient

of these funds could be diverted to do the necessary maintenance work which is urgently required on the river below the lock if it were available for that purpose. A provision authorizing any funds heretofore appropriated for the construction of the fourth lock to be used for the maintenance of the St. Marys River would give us the necessary authority for the use of that fund and would make it unnecessary to make a further appropriation at this time.

Mr. DEMPSEY. Could you give us in a general way about how much you anticipate will be left of that fund?

Gen. TAYLOR. Well, the work is all practically completed. We had on hand the 1st of December \$179,000.

Mr. DEMPSEY. The reason I ask you that, General, is this: Suppose you use \$56,000 of that fund for this item, could the remaining \$123,000 be used under the three items in the same group? In other words, suppose you used that \$56,000 which you need for dredging the St. Marys River, that would leave you approximately \$123,000 still. Could you use that toward the remaining items of maintenance in this group?

Gen. TAYLOR. I do not think we could, because we have certain additional work to be done there. There is a certain amount of the lock-operating machinery, electrical installation, and construction of the emergency dam still to be done.

Mr. DEMPSEY. So that all you feel it would be safe to do would be to use the \$56,000?

Gen. TAYLOR. Yes, sir. I do not think it would be safe to do anything else.

Mr. SMALL. Do you wish to limit the amount to be specified to \$56,000, or such sum as may be necessary?

Gen. TAYLOR. For maintenance in the St. Marys River.

Mr. DEMPSEY. When you once construct the dam the purpose for which it was appropriated has ceased?

Gen. TAYLOR. It may be that in another year we may come in with a request for an authorization to use any balance which may be remaining.

#### ST. CLAIR RIVER, MICH.

Mr. DEMPSEY. The next item is for the St. Clair River, Mich., for which you ask \$100,000.

Gen. TAYLOR. That item is for the maintenance of this channel at the foot of Lake Huron, coming into the St. Clair River from the north. The project provides for a channel 23 feet deep and 2,400 feet wide. It is shoaled to such an extent that it is about 300 feet wide. It makes it a very difficult matter to effect an entrance coming in from Lake Huron, which spreads out wide, particularly in foggy weather. It is a very difficult and dangerous entrance at the present time with such a narrow channel. I entered that channel the 1st of September on an ore-carrying boat, rather early one morning. It was a little hazy, and it was not at all an agreeable entrance, coming in there, even if it was perfectly smooth and the only difficulty was the haze. We stirred up the mud a good deal in getting in there.

Mr. DEMPSEY. You say in your report that the project depth obtains for but a width of 300 feet, the decrease having been progressive

since the attainment of full project width by contract operations in 1896.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And that navigation is difficult in very severe storms during the spring and fall months by reason of thick and heavy fog.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What you propose is to maintain a channel of 1,000 or 1,200 feet?

Gen. TAYLOR. Yes, sir. Although the funds that we now ask for will only give us 800 feet, we expect gradually to get back to 1,000 to 1,200 feet. The entire commerce coming down the lakes is affected by that section of the channel.

Mr. DEMPSEY. You have deferred expending what you have on hand with the idea that it was not enough, and until you got an appropriation sufficient to undertake a work of this size?

Gen. TAYLOR. No, sir. We had under contract practically all the money we had. On the first of December we only had \$14,000 available.

Mr. DEMPSEY. On page 1597 of the report the statement is made that the funds available apply to maintenance of channel at foot of Lake Huron; these funds will not suffice to appreciably increase present channel dimensions, and it is accordingly proposed to hold them until additional funds are provided, unless emergency dredging should be required.

Gen. TAYLOR. That is only the small amount of \$14,000. At the end of the year we had \$74,000 on hand, but most of the money we had on hand at that time was under contract.

Mr. DEMPSEY. Then that should remain as it is?

Gen. TAYLOR. Yes, sir; beyond any doubt.

#### CHANNELS IN LAKE ST. CLAIR, MICH.

Mr. DEMPSEY. The next item is for channels in Lake St. Clair, Mich., \$34,000.

Gen. TAYLOR. That is at the south end of the St. Clair River, and the conditions are the same, although not quite as bad, as at the north end of the St. Clair River. You come through the St. Clair Flats Canal out into Lake St. Clair, and there is considerable shoaling as you come out to the piers. So that it is necessary to redredge that channel. The whole of Lake St. Clair is shoal. Consequently, there is a good deal of deterioration of that channel.

Mr. DEMPSEY. You have a width of 600 feet, and you propose to increase it to 800 feet?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. That is what it is really for, is it not?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. You think that amount should be granted?

Gen. TAYLOR. I certainly do.

#### DETROIT RIVER, MICH.

Mr. DEMPSEY. The next item is for Detroit River, Mich., \$10,000.

Gen. TAYLOR. For maintenance, and \$1,000,000 for further improvements.

Mr. DEMPSEY. Let us take the \$1,000,000 item. The project is for an upbound channel, known as the Amherstburg Channel, 22 feet deep and 800 feet wide, from Lake Erie to the lower junction with Livingstone Channel, passing on the east side of Detroit River Lighthouse.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Twenty-one feet deep and at least 600 feet wide to the head of Livingstone Channel; thence 22 feet for a similar width to the 22-foot contour at the head of Ballards Reef.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. It also provides for a down-bound channel, known as Livingstone Channel, west of Bois Blanc Island, 22 feet deep and at least 450 feet wide from its upper end to opposite Bar Point, and thence 22 feet deep and 800 feet wide to the 22-foot contour in Lake Erie west of Detroit River Lighthouse. Then you have a dike on the west bank of the rock cut through Livingstone Channel to ameliorate cross currents.

Gen. TAYLOR. Yes, sir. This map will show the conditions. Coming in from Lake Erie we come up here [indicating]. This is what is known as the Livingstone Channel. It is a straight channel leading into the Detroit River. Formerly before that channel was dredged, both the up and down traffic had to take this crooked channel over on the Canadian shore. On account of the narrowness of the channel angles and the height of the ground there was constant danger to the enormous traffic going both ways. So that for this section of the route two channels were provided, one for up-bound traffic and one for down-bound traffic. The so-called Livingstone Channel was deepened, for a portion of it to a width of 600 feet, the balance of it being quite narrow. As it is all rock excavation there is a good deal of difficulty there in those large boats navigating that narrow channel. Consequently Congress authorized the widening of that channel. The work has been partially completed and this appropriation we are asking is for what is necessary to carry on the work next year.

Mr. DEMPSEY. General, taking into account the financial situation, how much of that ought to be appropriated in this bill?

Gen. TAYLOR. I think the whole of it should be. Now, in connection with that item I would like to have a proviso added to whatever appropriation you make. We have an office in Detroit in the Federal building. Within the last year or two the building has become very much overcrowded, due to certain additional Government activities in Detroit. The enforcement of the last constitutional amendment, I believe, is one reason for it. There are more Federal agents than heretofore have been in Detroit. The result has been a very congested condition in the Federal building and a few months ago the Treasury Department ordered us out of the building. We protested against it and claimed that we had as much right in the building as anybody, but they persisted in their order that we must leave the building. It developed, however, that the Treasury Department had submitted plans for the remodeling of the building, which would cost some \$200,000. If the remodeling had been completed there would have been ample room for our office and all these other activities. I took this matter up with the Treasury Department recently

and was informed that if we could provide a certain amount of money they would be glad to do so much of the work as would be necessary to enable us to stay in the building. We have canvassed the situation rather thoroughly in Detroit and we believe the best we can do, if we obtain an office at all, will be at a rental somewhere in the neighborhood of \$15,000 a year, as offices are extremely scarce and rents very high in Detroit.

The space in the Federal building was particularly fitted for us. We have there the lake survey office, where these maps are made. The proviso that I would like to have attached to the item is this:

*Provided, That of the moneys herein or heretofore appropriated for this improvement, not to exceed \$45,000, may be expended by the Secretary of the Treasury for remodeling and flooring over the light well of the Federal building at Detroit to better accommodate the demand for space and enable the Engineer Department to remain in its present quarters.*

In other words, if we can divert \$45,000 of the money that has been heretofore appropriated it will save that appropriation and the other appropriations which are disbursed by the Detroit office upward of \$15,000 a year, in addition to the expense of the moving and inconvenience that would be caused. Eventually this money would have to be appropriated when these changes are made. In other words, this change that I am proposing, that the Engineer Department should be allowed to pay for, is only a part of the general scheme for remodeling the building, and whatever is spent for that remodeling will by that much reduce the future cost of remodeling. It is in direct line with the remodeling proposed.

Mr. SMALL. Am I to understand that the officers of the Engineer Corps engaged in river and harbor work in the Detroit district have been ordered to evacuate the building to make room for prohibition agents?

Gen. TAYLOR. This is a letter from the Treasury Department dated October 23, 1920, which, referring to previous correspondence, says that the United States district attorney and the internal revenue collection office require additional room, and furthermore, the act of Congress authorizing the construction of the building specifically provided for space for the post office, and the department can not direct the post office to secure other quarters. We had suggested that if the parcel-post facilities were transferred elsewhere it would give more room. They say that the inspector who made an investigation of the situation of this building advised that moving the parcel post would afford some relief but not sufficient to place the office on a reasonable working basis, and it is therefore again requested that the engineer office be moved from the Federal building until the time when space desired will be available. I went to the Treasury Department and saw the Assistant Secretary handling this matter, and the arrangement was finally made that if we could provide money in any way that they would permit us to remain in the building. As I say, it simply anticipates the remodeling that the Treasury Department intends to make. All the lake interests have been accustomed to go to that building to see us, and it will save us paying \$15,000 a year for rent for some other less suitable space. It seems to me a very good use of our money. We are not asking for any additional appropriation, merely an authorization to use the money

which is already herein or heretofore appropriated. The Treasury Department would have made these repairs before if they had had the money, but they have no money available for it.

CHEBOYGAN HARBOR, MICH.

Mr. DEMPSEY. For Cheboygan Harbor, Mich., you ask for \$31,000. What do you propose to use that \$31,000 for?

Gen. TAYLOR. The entrance to the harbor was formerly protected by two piers which were originally built by sawmill interests. They were really piles of slabs and they were held down by lumber which was piled up ready for shipment. Due to changes in the lumber industry, the piers have in recent years not been used much. The lumber has been taken off of them. The slabs have been rotting and have been washing off by the waves into the channel. Now, what I wish to do is to place some stone on these piers so as to make them permanent and prevent the channel from deteriorating by shoaling and also by the slabs washing in and becoming dangerous obstructions.

Mr. DEMPSEY. Do you regard that as an essential item?

Gen. TAYLOR. Yes; I do.

Mr. DEMPSEY. All of it?

Gen. TAYLOR. Possibly it will not be necessary that all of that money be appropriated at this time.

Mr. DEMPSEY. \$20,000 would be sufficient at this time?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. For Alpena Harbor, Mich., you ask for \$5,000 and on page 1619 of your report you say that the completion of the channel restoration and the removal of shoaling which will develop prior to or during the navigation season of 1921 should not be delayed and will require dredging to an amount of 15,000 cubic yards in addition to that to be done with funds available. What do you say as to that?

Gen. TAYLOR. I think that should be granted.

HARBOR BEACH HARBOR OF REFUGE, MICH.

Mr. DEMPSEY. The next item is for Harbor Beach harbor of refuge, Michigan, \$27,000. It has rather a small tonnage, 23,156 tons.

Gen. TAYLOR. It is a small tonnage, but that has been used as a harbor of refuge and it is still used as a harbor of refuge in time of storm.

Mr. DEMPSEY. You had \$17,000 on hand the 1st of December.

Gen. TAYLOR. On page 1625, at the top, you will see the number of vessels that have sought refuge in that harbor.

Mr. DEMPSEY. Two hundred and eighteen vessels. The average is between 200 and 300 vessels a year.

Gen. TAYLOR. Yes, sir; the vessels that use the harbor commercially, in other words, the vessels that load and unload, are small in number, but it has happened a number of times that large lake freighters have gone in there in time of great storm to avoid disaster.

Mr. DEMPSEY. This is to repair the breakwater?

Gen. TAYLOR. Yes, sir.



Mr. DEMPSEY. Do you think something less could be appropriated?

Gen. TAYLOR. I think we should have all of that, because it is rather expensive getting a plant there. It is all needed, and I think it would be expensive to do it in two seasons rather than one. It would add to the expense.

Mr. DEMPSEY. Of course, if you compare the great harbors—even the harbor of refuge draws vessels there two out of three days on the average throughout the year.

Gen. TAYLOR. Yes; but in pleasant weather there would not be any there. In time of storm there have been as many vessels in there as you could possibly accommodate.

#### BLACK RIVER, MICH.

Mr. DEMPSEY. The next item is for Black River, Mich., \$5,000. That is to be used for the restoration of the project depth?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Which is 17 feet part of the way.

Mr. SMALL. Do you think that is essential, General?

Gen. TAYLOR. Yes, sir.

#### ROUGE RIVER, MICH.

Mr. DEMPSEY. The next item is for Rouge River, Mich. You have on hand \$360,000 in cash and contracts.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The question is, with \$360,000 on hand, whether you can get along with less for the coming year? Three hundred and ten thousand is under contract. There is \$50,000 available.

Gen. TAYLOR. Yes, sir. Possibly that item could be reduced somewhat, but it should not be reduced very much.

Mr. DEMPSEY. What figure would you put it at?

Gen. TAYLOR. I would say \$75,000. I am stating that for the reason that there are a number of bridges and the condition which would permit dredging at all of them may not be completed this year, but we should go ahead with the work as rapidly as we can do it. It is possible that all of the bridges may not be ready by the end of the year.

Mr. DAVIS. Does that include the \$3,000?

Gen. TAYLOR. And \$3,000 for maintenance.

Mr. DEMPSEY. That leaves \$75,000 in one column and \$60,000 in the other of your total.

Gen. TAYLOR. Yes, sir.

#### TOLEDO HARBOR, CLEVELAND, OHIO.

Mr. DEMPSEY. The next item is in the Cleveland, Ohio, district, an item for Toledo Harbor, \$60,000. What have you to say about that, General?

Gen. TAYLOR. It is necessary. The channel shoals quite rapidly. If you will remember, that is quite a long channel, leading in from the wetsern end of Lake Erie, through the Maumee Bay, and up the Maumee River to Toledo. Unless it is redredged every year there will be serious interference with navigation.

Mr. DEMPSEY. What is the average expenditure there?

Gen. TAYLOR. Between \$30,000 and \$40,000.

Mr. DEMPSEY. You have the proper depth now?

Gen. TAYLOR. Yes, sir. That was correct at the time that report was prepared. Probably the dredging has just been finished. It requires dredging every spring.

Mr. DEMPSEY. General, I see you had to remove an obstruction in the channel near the New York Central Railroad Bridge, at a cost of \$10,000, aside from your maintenance dredging. Taking those facts into consideration, do you think the \$60,000 could be reduced any without disadvantage to commerce? You have \$30,000 on hand, and most of that is in cash.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. All I would suggest is that you seem to have a project depth now of 21 feet up to Fassett Street. I do not know whether that 17 feet 1 mile farther upstream is the project depth or not?

Gen. TAYLOR. The project depth of 21 feet at low-water datum does not prevail throughout the full width of the channel. It is very narrow and the shoaling is considerable on the sides.

Mr. DEMPSEY. It is 400 feet wide from deep water for a distance of 15 miles. From there you have a project depth.

Gen. TAYLOR. That was completed in 1915, but the project has not been completed yet.

Mr. DEMPSEY. The controlling depth is 21 feet on Fassett Street?

Gen. TAYLOR. That is in the center of the channel.

Mr. DEMPSEY. The report does not say so.

Gen. TAYLOR. It states that the full width has not been maintained, the depths on both sides varying from 15 to 21 feet.

Mr. DEMPSEY. You do not have a project depth a mile above Fassett Street?

Gen. TAYLOR. There is no business above Fassett Street, so that the depth has not been maintained. I should prefer to see the whole amount estimated for allowed, but in view of what we have on hand and what we have received in the past years, it could probably be reduced by \$10,000; that is, it could be reduced to \$50,000. I do not believe it could be reduced below that amount, because the average is \$34,000 a year and the dredging which is done there should be done in the spring; \$50,000 added to the \$23,000 which we have on hand is a total of \$73,000 which will provide for the spring of 1921 and the spring of 1922. That gives us an average for the two years of only \$37,000, which is just a little more than what has been spent in the last five years. As a matter of fact it is not equal to what has been spent in the last two years.

#### SANDUSKY HARBOR, OHIO.

Mr. DEMPSEY. The next item is for Sandusky Harbor, Ohio, \$10,000.

Gen. TAYLOR. That is an item which is simply for dredging where necessary in the channel.

Mr. SMALL. What was the unexpended amount on December 1?

Gen. TAYLOR. \$66,601 unobligated and \$122,024 obligated.

Mr. DEMPSEY. That is a very much smaller harbor than Toledo?

Gen. TAYLOR. Yes; but still there is quite a commerce there. It is 2,000,000 tons.

Mr. DAVIS. You have quite an amount on hand now, General?

Gen. TAYLOR. Yes, sir; we have quite an amount on hand.

Mr. DAVIS. Do you think you have enough on hand to do that work?

Gen. TAYLOR. It is possible that that might answer the purpose.

Mr. DEMPSEY. On pages 1645 and 1646 I notice you propose to use it for extension of the project.

Gen. TAYLOR. No; the \$10,000 is for maintenance dredging.

Mr. DEMPSEY. It does not say so.

Gen. TAYLOR. The report is not clear on that point, but I know that is what it is for.

#### HURON HARBOR, OHIO.

Mr. DEMPSEY. The next item is for Huron Harbor, Ohio, \$6,000. You have practically nothing on hand.

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. This is for dredging?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I suppose it is for maintenance?

Gen. TAYLOR. Yes, sir. We require it annually.

Mr. DEMPSEY. You recommend that that be granted?

Gen. TAYLOR. Yes, sir.

#### LORAIN HARBOR, OHIO.

Mr. DEMPSEY. The next item is for Lorain Harbor, Ohio, \$13,000. What you propose to do is to expend \$8,000 in repairs of the rubble section of the east pier?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And \$5,000 in maintenance dredging?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Are those two items necessary?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And you recommend that the full amount should be granted?

Gen. TAYLOR. Yes, sir.

#### FAIRPORT HARBOR, OHIO.

Mr. DEMPSEY. The next item is for Fairport Harbor, Ohio, \$16,000.

Gen. TAYLOR. These are little maintenance items. They shoal every year, and if we do not keep up the maintenance the shoaling increases.

Mr. DEMPSEY. You had \$239,000 available for Fairport Harbor?

Gen. TAYLOR. The money that was appropriated for continuing improvements could be used for maintenance. I think, under those circumstances, no appropriation is necessary, in view of the large amount that we have on hand, a portion of which can be used for maintenance if required.

## CONNEAUT HARBOR, OHIO.

Mr. DEMPSEY. The next item is for Conneaut Harbor, Ohio, \$10,000. You have only \$45,000 in cash there. It is a very large harbor. You have \$25,000 in outstanding contracts. You propose to expend this \$10,000 in dredging the entrance to the canal?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. At the end of the fiscal year the controlling depth of the channel for a minimum width of 176 feet was 20 feet at low-water datum?

Gen. TAYLOR. Yes, sir. In other words, you have the project depth at the end of the fiscal year, but in all those harbors we do our redredging work as early as possible in the spring.

Mr. DEMPSEY. That reduces your total by \$26,000.

Gen. TAYLOR. Yes, sir.

## ERIE HARBOR, PA.

Mr. DEMPSEY. We will now take up the items in the Buffalo, N. Y., district. The first item is for Erie Harbor, Pa., \$68,000. I understand that is for the repair of the breakwater?

Gen. TAYLOR. No, sir. It is for repairs to the revetment that has been placed under the Presque Isle Peninsula to prevent the breaks into the harbor.

Mr. DEMPSEY. They had a big break and washout, did they not?

Gen. TAYLOR. Yes, sir. It is partially repaired. In the last two months they have had some more bad storms, but those storms have not seriously damaged the work which we have already done. However, we ought to have this additional money in order to complete that work.

Mr. DEMPSEY. In other words, it is work to protect the harbor?

Gen. TAYLOR. It is to protect the whole harbor. It has broken through in one place two or three times. If you allow that break to stand it might in time injure the harbor.

Mr. DEMPSEY. What do you propose to do besides repairing the wall?

Gen. TAYLOR. There was no wall there, but we are putting some riprap on it to protect that breach.

Mr. DEMPSEY. That is what this appropriation is asked for?

Gen. TAYLOR. Yes, sir.

Mr. SMALL. What is Presque Isle used for?

Gen. TAYLOR. I do not think there is anything out there. There is no commercial use made of it.

Mr. DEMPSEY. Do you think the \$68,000 is necessary in this bill?

Gen. TAYLOR. Yes, sir.

## DUNKIRK HARBOR, N. Y.

Mr. DEMPSEY. The next item is for Dunkirk Harbor, \$235,000. That is for repairs to the breakwater?

Gen. TAYLOR. Yes, sir. Mr. Reed was here the other day and made a statement regarding it.

Mr. SMALL. It has a small commerce.

Gen. TAYLOR. It has a small commerce, and I do not believe we could use all that money, even if we had it all. I think conditions were very plainly stated the other day when Mr. Reed was here. The breakwater ought to be repaired in order to protect the harbor, but it is a great question in my mind whether we could use all of the money in one season, even if we had it.

Mr. DEMPSEY. What is the lowest amount you can get along with and make fair progress?

Gen. TAYLOR. I should say \$100,000 would be sufficient.

BUFFALO HARBOR, N. Y.

Mr. DEMPSEY. The next item is for Buffalo Harbor, N. Y., \$363,000 for maintenance and \$2,875,000 for widening the entrance.

Gen. TAYLOR. \$363,000 for maintenance.

Mr. DEMPSEY. At the bottom of page 1689 you have \$260,000 for replacing balance of old timber superstructure on old section of breakwater; \$45,000 for replacing old timber superstructure on stone sea-slope portion, south harbor section of breakwater, with rubble mound; and \$420,000 for replacing old superstructure on Stony Point section of breakwater with rubble mound. That makes a total of \$725,000. Where does the balance come from?

Gen. TAYLOR. On the next page it is stated that the placing of all of the work under one contract would be most advisable and advantageous, and the authorization of funds to this end is recommended, with initial appropriation for the fiscal year 1922 of not less than \$350,000; that redredging of the channels to maintain project depth, required annually, and general supervision of the harbor, is estimated for the fiscal year 1922 at \$13,000, and the estimate is therefore submitted for \$363,000 for maintenance for the fiscal year 1922 with recommendation for an authorization of an additional amount of \$375,000.

Mr. DEMPSEY. In other words, you think you can use only half of that for the first year?

Gen. TAYLOR. That is all. While the total estimate was \$725,000, it was assumed that we could use only half of it for the first season and we recommended that an estimate for \$350,000 be included with the authority to enter into contracts for the balance. Certainly you should not reduce that appropriation of \$363,000. That is very necessary.

Mr. DEMPSEY. \$350,000 for repairs and \$13,000 for supervision and maintenance?

Gen. TAYLOR. Yes, sir; and any redredging that may be necessary.

Mr. DEMPSEY. Is not there a very considerable commerce now going down to the steel plant on the Niagara River between Buffalo and Tonawanda?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And that turn there is more than a right-angled turn, getting into that 200-foot channel?

Gen. TAYLOR. No, sir; it is not quite that much. You do not have quite a right angle.

Mr. DEMPSEY. Now, at the north of that entrance that shallow portion indicated by blue on the map is a rock bottom?

Gen. TAYLOR. A good deal of it is rock bottom; yes, sir.

Mr. DEMPSEY. So that if a boat were cast on that portion it would result in disaster, would it not?

Gen. TAYLOR. It would be a serious matter. Now, there are two things that could be done to widen the entrance into Buffalo Harbor at the north end: One would be to excavate the shoals farther north, and the other would be to cut off a piece of the breakwater.

Mr. DEMPSEY. Now, General, stopping right there: Your first suggestion is one in line with what I was going to suggest to you. Would not there be a very great advantage in having a direct channel from Buffalo Harbor to the Niagara River to accommodate great industries that are being built up below—to the north of Buffalo? There are two large steel plants there, and the Dunlap Tire Co., which are doing a large business.

Gen. TAYLOR. Here is a triangular area [indicating] between the entrance into Buffalo Harbor and the entrance to Black Rock Channel. A piece of that triangular area approximately like that [indicating] is already under contract to be cut off, or has already been cut off. This map does not show it correctly. That angle has been cut off and this angle has been recommended to be cut off. In other words, we have already taken steps to cut off the corners so as to greatly facilitate the passage of ships from Buffalo Harbor to Tonawanda.

Mr. DEMPSEY. Is it not the practicable way to dredge more of your triangle, more of the shallow portion of the channel beyond the triangle?

Gen. TAYLOR. I do not think it would help very much. In other words, we have taken off enough of that triangle so that ships can now fairly easily turn around there. Of course, the more of that you take off, even if you take off the whole triangle, including that breakwater and all, the more you facilitate navigation. But it would be very expensive, and we have taken it out now to such an extent that it is reasonably easy for navigation.

Mr. DEMPSEY. What is the width of that triangle between the channel and the shallow turn to the west?

Gen. TAYLOR. That is about 300 feet.

Mr. DEMPSEY. Is not the logical way, if the Buffalo Harbor entrance is to be widened, to so widen it as to simplify and at the same time to make more easy the course of vessels coming up and down the river?

Gen. TAYLOR. That is, by dredging off more of this triangular area?

Mr. DEMPSEY. Yes; and more of this area [indicating].

Gen. TAYLOR. That is right; it would be. But it is enormously expensive, because of that rock. You will notice that here [indicating] we have a depth of only 7 feet and up here [indicating] only 5 feet. Then there is also this old breakwater which was built by New York City. If you could remove all of that and remove that breakwater, you would expose all that portion of the harbor to waves coming in directly from the lake. You have got to leave the breakwater there. It would be very expensive to take out all that triangular area.

Mr. DEMPSEY. Suppose we dredge off the north end of that triangle for, say, 40 per cent, up to within a few feet of the breakwater and then dredge out to a corresponding depth of the shallow portion on the west side of that channel between the triangle and the shallow part to the west, leaving out the Niagara River. You would have a wide entrance and you would have easy entrance up and down the river?

Gen. TAYLOR. That is correct, but the cost of doing it would run into millions. It is just a question of balancing cost against benefit; that is all.

Mr. DEMPSEY. But as a matter of fact in going through the harbor here [indicating] it is as narrow a harbor as Buffalo Harbor.

Gen. TAYLOR. We have had no great amount of complaint, or at least we have had very little complaint as to the difficulties of getting into the harbor. The great complaint we have is to the entrance to Buffalo River just outside the Lackawanna Pier. That is where the difficulties existed for a long time. On account of the changes which have been made there in that pier the difficulties have been pretty much done away with at this time. Also by taking off the corners of those various shoals and with some additions, which are either in there now or will be there very shortly, some further cutting off of the corners, navigation, such as there is, between Buffalo and Tonawanda is pretty well looked out for.

Mr. DEMPSEY. Is that used as a means of going out as well as a means of going in?

Gen. TAYLOR. The entrance to Buffalo Harbor?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. Yes, sir; that is the only channel. It must be used by vessels going both ways.

Mr. DEMPSEY. They would hardly have room to pass there, would they?

Gen. TAYLOR. It would be very close navigation to pass in that section—right in here [indicating]. There is room enough everywhere except in that little short space opposite the Lackawanna dock. But it would require a very skillful navigation for two big boats to pass there without having an accident, either by rubbing each other or rubbing one dock or the other. All that you suggest is work that is desirable and would be done if it could be done at a moderate cost, but it is just a case of balancing your cost against your benefit.

#### BLACK ROCK CHANNEL AND TONAWANDA HARBOR, N. Y.

Mr. DEMPSEY. Your Black Rock Harbor item is \$10,000 and \$170,000?

Gen. TAYLOR. That is for the widening that I spoke of—cutting those points off, widening the Black Rock Channel at the bend; that is, cutting that triangle off.

Mr. DEMPSEY. I see. Then, here is the work on the Tonawanda Harbor?

Gen. TAYLOR. That is included in one project—Black Rock Channel and Tonawanda Harbor.

Mr. DEMPSEY. The new work is the widening at the bend, which you spoke of, \$170,000?

Gen. TAYLOR. Yes, sir; and the other is redredging the Black Rock Channel; that is all.

Mr. DEMPSEY. What do you say as to the necessity of those?

Gen. TAYLOR. I should say both of them are necessary.

Mr. DEMPSEY. They are all very large concerns, there, are they not?

Gen. TAYLOR. Very large. Well, there is a business of about 2,000,000 tons a year goes through that channel.

Mr. DEMPSEY. The Dunlop plant is, I think, not completed, but I think they have as large a plant as there is in Buffalo, including the Lackawanna Steel; it has just been built at a cost, I think, of \$50,000,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Well, that will take out of the totals there in the first column \$100,000, and leave it \$576,000.

Gen. TAYLOR. \$135,000.

Mr. DEMPSEY. Oh, yes.

Gen. TAYLOR. Leaving \$541,000.

Mr. DEMPSEY. And leave the other as it is?

Gen. TAYLOR. Yes, sir.

#### CHARLOTTE HARBOR, N. Y.

Mr. DEMPSEY. Now, General, the next is Charlotte Harbor, and a number of small harbors along Lake Ontario.

Gen. TAYLOR. They are all small harbors, maintenance dredging and repairs to breakwaters. They are all small work.

Mr. DEMPSEY. I see; the only further improvement item is at Oswego.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And that river is destined to be a great traffic way?

Gen. TAYLOR. I see no reason why it should not.

Mr. DEMPSEY. The State is building a very large, modern elevator, one of the best in the country.

Gen. TAYLOR. Well, that is the terminus of the barge canal, and there is no reason why they should not develop very large terminals.

Mr. DEMPSEY. Now, all of these projects, with the exception of Cape Vincent harbor, have a large commerce?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And the amount appropriated for that is very small, \$2,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, just run through those and see whether there are any of those that could be reduced in this bill, or should be.

#### OSWEGO HARBOR, N. Y.

Mr. SMALL. What about the \$50,000 for improvement at Oswego?

Gen. TAYLOR. I am satisfied that should be given.

Mr. DEMPSEY. On page 1717, that is to rebuild 400 feet of concrete superstructure at the outer breakwater.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. I wish you would just glance through those. That is not in my district; at the same time it is in western New York, and I would like to have justification for it.



Gen. TAYLOR. The only question about that Oswego Harbor item is whether it should be classed as new work or maintenance.

Mr. DEMPSEY. It really is repair.

Gen. TAYLOR. It really is repair. I should classify it as maintenance work rather than new work. You are simply replacing an old, rotten, deteriorated crib superstructure with a concrete superstructure. The only reason it is classed as new work is the whole question of the Oswego Harbor was reconsidered by direction of the committee and a report was submitted in which recommendations were made as to what should be done. Part of the recommendations—one recommendation was that this old timber crib should be replaced with concrete. That report is published in House Document No. 55 of the Fifty-eighth Congress, second session, and it is carrying out a recommendation contained in that report that this appropriation is for, and it is only for the reason that it is in a document of that kind that it is classed as new work. It really is maintenance work.

Mr. DEMPSEY. Now, if you will turn to page——

Gen. TAYLOR. All of those items there, without exception, I should say, should be given as estimated.

Mr. SMALL. And would you include both the \$17,000 and \$50,000 as maintenance?

Gen. TAYLOR. I would; yes, sir. The \$17,000 is for minor repairs for redredging and general work, whereas the \$50,000 is for special items for rebuilding with concrete a certain amount of the old timber crib superstructure.

Mr. SMALL. Well, you come now, Mr. Chairman, to the Los Angeles district. No estimate. You have no revised estimates, General, for those?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. Then we turn next to the first San Francisco district.

#### SAN FRANCISCO HARBOR, CALIF.

Mr. DEMPSEY. Now, the \$10,000 is for the harbor there?

Gen. TAYLOR. That is for general maintenance purposes, which consists practically of keeping a small boat running around the harbor looking out for illegal deposits, and other work of that kind, which would injure the harbor. It is a patrol and inspection boat that we run there.

#### OAKLAND HARBOR, CALIF.

Mr. DEMPSEY. On this Oakland Harbor, there is \$217,000 on hand there at Oakland, but you do not have anything at San Francisco.

Gen. TAYLOR. No; we had nothing there. What we have on hand is expected to be used for dredging channels in the inside of the harbor. The amount that is estimated we expect to run our own harbor dredge with for a short time, redredging at the entrance to the harbor. It is possible that a certain amount of the funds on hand could be diverted to that work for which this estimate of \$25,000 is submitted, and that that could be omitted.

Mr. DAVIS. You can omit this \$25,000?

Gen. TAYLOR. I think that could be omitted.

## RICHMOND HARBOR, CALIF.

Mr. DEMPSEY. The next item is \$200,000 for Richmond Harbor.

Gen. TAYLOR. That is the item that Mr. Currie spoke about the other day. It is a cooperative project in which the city of Richmond is required to pay dollar for dollar with the United States and do other work besides. They have their money already in the treasury for use as soon as the Government money becomes available.

Mr. DEMPSEY. Now, I see on page 1751 that the city of Richmond—oh, the funds will not be expended until the city of Richmond has contributed a like sum and built the required bulkhead from the municipal wharf to Point Potrero to impound the dredged material.

Gen. TAYLOR. Well, as Mr. Currie stated the other day, the city has appropriated more than \$200,000, so they are ready to go ahead and do their share.

Mr. DEMPSEY. Well, what about the bulkhead? That is the thing I am asking about. You say you will not spend it before they build that bulkhead.

Gen. TAYLOR. Well, the bulkhead could be built while the dredging is being done.

Mr. DEMPSEY. Do you know whether they are ready to do that or not?

Gen. TAYLOR. They are ready to do that; yes sir.

Mr. DEMPSEY. Well, what do you say about this bill? Should the full amount go in this bill?

Gen. TAYLOR. If we are to meet their appropriation, the full amount should go in this bill; yes, sir.

Mr. SMALL. Would the harbor suffer if the rate of progress were reduced by a reduction in the estimate?

Gen. TAYLOR. I do not think it would suffer seriously; no, sir.

Mr. DEMPSEY. What would you suggest, then, General?

Gen. TAYLOR. Well, I am not sure but one-half of that would give us a reasonable amount; \$100,000 of Government money with \$100,000 of their money would give us \$200,000 to spend in the next season, which is a reasonable amount for that harbor. You will understand. Mr. Chairman, if there were no question of shortage of funds, I should say that you ought to appropriate the full \$200,000, but to meet the existing conditions I suggest that we cut down as much as possible.

## SUISUN BAY CHANNEL, CALIF.

Mr. DEMPSEY. Yes.

Next is the \$10,000 for redredging at Suisun Bay Channel.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you say about that?

Gen. TAYLOR. I think that should be given.

Mr. DEMPSEY. The next is \$50,300 for Petaluma Creek, Calif.

Mr. SMALL. Another good creek.

Mr. DEMPSEY. That is page 1765.

Mr. SMALL. There are 235,000 tons.

Mr. DEMPSEY. I see your estimate, page 1767, is \$45,000 for dredging under contract, \$800 for operation of the boat *Suisun*, and the balance for overhead.

What do you say about that?

Gen. TAYLOR. I think that should all be given. All of that commerce is produce, and it goes to San Francisco, nearly all of it. It is a valuable commerce, as you see. The value is \$18,000,000, and it is all benefited by this improvement.

Mr. SMALL. And I call attention to the fact that the project up there is only 8 feet.

Mr. DEMPSEY. Eight feet, and 200 feet wide across San Pablo Bay; 6 feet and 50 feet wide—

Mr. SMALL. Fifty feet wide and 5 feet deep up to the railroad bridge.

Mr. DEMPSEY. Yes.

Mr. SMALL. And 50 feet wide and 4 feet deep to McNears Channel.

Mr. DEMPSEY. And there is a cut-out 5 feet and 6 feet—by cut-off you mean what, General?

Gen. TAYLOR. It is a very crooked channel.

Mr. DEMPSEY. You cut off and shorten it?

Gen. TAYLOR. Cut off these bends and make easier navigation.

Mr. SMALL. It shows a large commerce can be carried on a limited depth where they really desire to use the channel.

Mr. DEMPSEY. Yes; I think that is a very good point, and probably the best illustration we have seen.

I see, General, that you had your project depth across the flats, but have only 5 feet to the railroad bridge—I do not know whether that is the project depth or not—and then across to McNears Canal. Apparently, that should be 6 feet all the way, and you have only 5 feet part of the way and 4 feet part of the way.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And this is to get the project depth?

Gen. TAYLOR. Well, to get the project depth, and also to straighten out the channel by making those cut-offs.

Mr. DEMPSEY. Well, what do you say about the amount? You have \$34,000 on hand.

Gen. TAYLOR. All of which is under contract.

Mr. DEMPSEY. Yes; I see it is. Well, what about the estimate?

Gen. TAYLOR. This amount in the estimate should be given.

#### HUMBOLDT HARBOR AND BAY, CALIF.

Mr. DEMPSEY. The next one is Humboldt Harbor and Bay, \$250,000 for maintenance and \$500,000 for further improvement, with \$270,000 on hand.

Gen. TAYLOR. That harbor is on the northwestern coast of California. It has for many years been a very important harbor, and had no railroad communication at all. Within a comparatively few years a railroad has been completed through, so that the importance of the harbor has somewhat diminished, but it is still a very important lumber-shipping point, and it has a good deal of general business. A regular line of boats runs from San Francisco to Humboldt Harbor, and it is upon a very foggy, dangerous section of the

coast. The channel would shoal rapidly if it were not for the jetties, and if the jetties are not maintained they very soon deteriorate, due to the great exposure to the waves.

It is a difficult project to construct and expensive to maintain, on account of the difficulty in getting stone there. The stone is quarried at some considerable distance, brought in by rail, and taken out on the jetties and dumped overboard.

Mr. DEMPSEY. Well, now, taking into account the amount of commerce, which is 305,000 tons, and its relation to other harbors in tonnage, taking into account you practically have \$270,000, what should those two items be cut to? You see they are out of proportion to the bill?

Gen. TAYLOR. They could each be cut in half. I do not think they should be cut below that.

Mr. DEMPSEY. \$250,000 for that \$510,000?

Gen. TAYLOR. Yes, sir; and \$125,000 for the other.

Mr. DEMPSEY. Yes; that is pretty large.

Gen. TAYLOR. Well, make it round figures, \$350,000.

Mr. DEMPSEY. The next is Crescent City Harbor, \$256,000. What is the reason there is not any tonnage given there?

Gen. TAYLOR. The tonnage for Humboldt Harbor, 305,000, was the tonnage for 1918, and there is a footnote that no statistics were kept for 1919, as the engineer's office at Eureka was closed, and it was therefore impossible to obtain accurate figures, and I think that same thing applies to Crescent City Harbor.

Mr. DEMPSEY. Well, this is new work on the breakwater.

Gen. TAYLOR. It is new work; yes, sir.

Mr. DEMPSEY. And this is really the same harbor as Humboldt Harbor, is it not?

Gen. TAYLOR. No; it is farther north. It is about 50 miles farther north.

Mr. SMALL. Seventy miles, the report shows, north of Humboldt Bay.

Gen. TAYLOR. Seventy miles north of Humboldt Bay.

Mr. DEMPSEY. I see. This is a case where the Government has never made an appropriation, but it was built and has been maintained so far as a private harbor, I notice.

Mr. SMALL. Not a private harbor?

Mr. DEMPSEY. Well, I mean it has been built and maintained by private interests.

Mr. SMALL. And local cooperation.

Gen. TAYLOR. For a long time, Mr. Chairman, there was simply a wharf which was built in behind the headland where it was exposed to the ocean. They could load there only when the sea was practically still. Whenever the sea was rough they had to pull outside, and sometimes it was weeks that a vessel would have to lie off the wharf waiting for an opportunity to get in.

The local interests were very much interested in obtaining a breakwater to protect the harbor and make it a really useful harbor. They agreed to contribute a certain amount of money toward it, and one of the conditions also was that a railroad connection should be established from Crescent City to Grants Pass, Oreg. The railroad condition has not been met. The local interests requested that they be

authorized to go ahead and spend their own money toward the construction of the breakwater.

That is the only work which has heretofore been done.

Mr. DEMPSEY. Well, taking into account all of the circumstances as detailed by you, General, do you think any appropriation should be made at this time? You say, too, there should not be any money expended there until they appropriate something—or, until the railroad condition is fulfilled—bottom of page 1778.

Gen. TAYLOR. I would suggest, Mr. Chairman, that half of that amount be appropriated, we will say \$100,000. That will enable us to start the work as soon as the conditions precedent have been met, and it will also enable them to go ahead and comply with the conditions.

Mr. DEMPSEY. Well, in view of the fact, General, that they might not meet those conditions—building a railroad is not a very simple thing, particularly in these days—do you not think an appropriation of \$50,000 is enough, because it may all be tied up for the year.

Mr. SMALL. Just a moment. Those people have been so liberal there in their local contribution, and have made such sacrifices—this is the item that Mr. Lea talked to me about.

Mr. DEMPSEY. Yes.

Mr. SMALL. I hope we can make the appropriation \$100,000. The estimate is \$250,000.

Mr. DEMPSEY. Well, here is the difficulty, Mr. Small: The project has been adopted with the provision that no expenditure can be made until they have built their railroad.

Mr. SMALL. Yes.

Mr. DEMPSEY. Now, we have no authority—it is really a project question; the waiving of that condition would be a question of modifying the project, and it would be in the jurisdiction of the general committee just as much as the adoption of a new project.

Mr. SMALL. Well, I am not suggesting modifying the original condition as to local cooperation in any way, referring particularly to the construction of the railroad, but they came before the committee when we were preparing the 1919 bill and urged that the condition as to the construction of the railroad be waived simply to permit their local contribution of \$200,000, which I think is the amount—

Gen. TAYLOR. Yes, sir.

Mr. SMALL. To be expended, and it was waived in order that their money might be expended so it would go as far as it would.

Mr. DAVIS. Did they spend it?

Gen. TAYLOR. They turned it over to the United States and we are spending it now. We made a contract for the stone, and have done the work with it exactly as if it were Government funds. They placed the money in our hands.

Mr. SMALL. We want to remember about the representation that was made before as to the reason for waiving the provisions as to the completion of the railroad, that the railroad could not be built during the war time, but it is altogether probable, with the intention of those men behind the railroad to build it, that between now and the next appropriation on the river and harbor bill the railroad

will be constructed; so, in view of all of that, and their cooperation, I suggest that the appropriation be made \$100,000, or reduce the estimate from \$250,000 to \$100,000.

Mr. DEMPSEY. I realize the force of all you say. The only trouble is this: If you make the appropriation and they do not build the railroad, we are simply appropriating that amount of money and tying it up in the Treasury.

Mr. DAVIS. Can not you go on and expend that the same as you are spending the \$200,000?

Gen. TAYLOR. No; we can not spend any Government money until all of the conditions are met. You see, the condition does not require them to build a railroad. It only requires them to give assurances that the railroad will be built within a reasonable time. Now, they will have to show us they have made arrangements for financing the road and are prepared to go ahead with it in good faith.

Mr. DEMPSEY. What do you say, Mr. Davis, under the circumstances?

Mr. DAVIS. I would like to encourage local cooperation in the advancement of money; I like to encourage that, and if we go on, perhaps, and give them \$100,000 now they will probably give us \$200,000; they are built along those lines, apparently, and they may give us the railroad and the harbor and everything else.

Gen. TAYLOR. They will do all they can, Mr. Davis, that is sure.

Mr. DEMPSEY. Suppose we put that down \$100,000 tentatively, and see how we come out?

Now, let us see what these totals are here.

Mr. SMALL. We have reduced the \$295,000 for maintenance down to \$145,000, and reduced the \$1,010,000 for improvements down to \$500,300.

Gen. TAYLOR. Yes, sir.

Mr. SMALL. A little more than half in one case and about half in the other.

Gen. TAYLOR. Yes, sir.

STOCKTON AND MORMON CHANNELS AND FREMONT CHANNEL AND McLEOD LAKE.

Mr. DEMPSEY. Well, the next is \$26,000 for Stockton and Mormon Channels, Fremont Channel; and McLeod Lake, for maintenance. Your estimate on that item is at the top of page 1787.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And it is for dredging and for snagging, \$26,000.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. There seems to be a reasonable amount of traffic there.

Gen. TAYLOR. There is a very large traffic. It is carried in small boats, but there are a great many of them; that delta between the San Joaquin and Sacramento Rivers is really a wonderful country.

Mr. SMALL. It is very interesting; I have been over it.

Mr. DEMPSEY. Well, what do you say about that amount?

Gen. TAYLOR. I should say it should not be reduced.

## MOKELUMNE RIVER, CALIF.

Mr. DEMPSEY. The next is \$800 on the Mokelumne River, page 1791. What about that \$800? Do you want it or not?

Gen. TAYLOR. Yes, sir; it is a small snagging proposition.

Mr. DEMPSEY. All right.

## SACRAMENTO RIVER, CALIF.

The next is \$95,000 for the Sacramento River, Calif.

Mr. SMALL. Now, let us look into that and see if that is essential

Gen. TAYLOR. It certainly is, Mr. Small. You see the business there amounted to 1,500,000 tons.

Mr. SMALL. Quite an important commerce.

Gen. TAYLOR. And if we do not maintain that channel we interfere seriously with that business. There are some of the best river steamers that I know of anywhere in the United States operating regularly between San Francisco and Sacramento. They go both day and night, similar to the boats that run on the Hudson. They are not quite as big as those, but they are very fine boats, and they also do an enormous business in small boats which go to the various farms located along the banks of the river.

Mr. DAVIS. The value of the products seems to be very large—\$78,000,000.

Gen. TAYLOR. Yes; they raise, for instance, a great many of the vegetables that we eat. I have seen an asparagus field a mile square in that country.

Mr. DEMPSEY. I see your channel is 7 feet for 60 miles, 4 feet deep for 86 miles, 3 feet deep for 51 miles, and then such depths as are practicable 52 miles. That is at page 1794 there; see "Existing project," at the bottom of the page.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. From February to May they ran vessels drawing 14 feet.

Gen. TAYLOR. To Sacramento.

Mr. DEMPSEY. Yes.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. The project depths at low water are usually available—this does not seem to show the present condition—oh, I see; "controlling depth of the river at Sacramento is 7 feet; from Sacramento to Colusa, 2.5 feet." Well, that is as against 4 feet, is it not?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And from Colusa to Butte City, 1.5 as against 3 feet; from Butte City to Sids Landing, 1.5 feet.

Gen. TAYLOR. One reason for the depths being so little in the upper river in 1920 was the fact that last year was a year of excessive drought in California. They have had three years of less than average rainfall, and the last year was the driest of all. This year they are having a heavy rainfall and snowfall, so that means that next summer there will probably be much better water than has prevailed for a number of years past, but it will be necessary to repair the dikes, maintain the dams, and do dredging both above and below Sacramento. The bulk of the business, of course, is below Sacramento.

Mr. DEMPSEY. What is the average expenditure, Mr. Clerk?  
The CLERK. \$60,000.

Mr. DEMPSEY. You have \$18,000 in cash and \$5,000 under contract. Do you know anything about the state of the contract?

Gen. TAYLOR. Well, the contract was for reconstruction of the snag boat.

Mr. DEMPSEY. So you really have only \$18,000?

Gen. TAYLOR. \$18,000; that is all.

Mr. DEMPSEY. So that gives you about \$110,000?

Gen. TAYLOR. Yes, sir.

Mr. DAVIS. Do you think you could get along with \$75,000?

Gen. TAYLOR. I think we ought to have the full amount. It is a very important thing.

Mr. DEMPSEY. I think, with the importance of the traffic, we ought to do that, don't you?

Mr. SMALL. I think so.

Mr. DAVIS. Yes. The volume of the traffic is big and its value is very great.

Mr. SMALL. Well, there has been a recommendation on the Sacramento River to limit improvements on the river to Chico Landing instead of Red Bluff. It seems to me that modification ought to be included by the Rivers and Harbors Committee.

Gen. TAYLOR. It really ought to be.

Mr. SMALL. I have been up that river, and it ought not to be improved up there.

Gen. TAYLOR. We ought not to try to improve the upper end of the river, and there is still another question: All of that land in the delta is land for which irrigation is necessary in order to produce the proper crops. The question as to how much water should be used for irrigation and how much for navigation is one that is bothering everybody a good deal out there, and the question of whether they should not build reservoirs up in the mountains to provide water for irrigation is also being considered, and I think sooner or later they will build reservoirs and store all the water they can. Every cubic foot of the water in California has a distinct value.

#### COOS BAY, OREG.

Mr. DEMPSEY. What do you say about Coos Bay, Oreg., General? You have \$160,000—\$100,000 in cash and \$60,000 in outstanding contracts?

Gen. TAYLOR. I would suggest that that full amount be given. The project for Coos Bay was adopted a number of years ago and provided for jetties. A suggestion, however, was made that we build a dredge and see what we could do with this seagoing dredge for the maintenance of the channel, as that would be very much cheaper than the construction of the jetties. We did build a dredge, and they have been operating it quite successfully there for a number of years, but unless the dredge is kept continually at work the channel very rapidly shoals. This fall, for instance, we had a channel there 31 feet deep. The dredge was taken off and sent up to Grays Harbor. A storm came along, and in a few days it filled in the channel 6 feet.

We dredge between 25 and 30 feet every fall, and by spring it has shoaled up 20 feet or less. We then start redredging it.



The dredge, when it was built, was underpowered. The engines were not sufficiently large. We knew that, but we did not have the money to put in the engines we desired to put in.

Mr. DAVIS. What is the use of dredging there at all, General?

Gen. TAYLOR. Because all during the summer we keep a good channel, and during the winter it gradually shoals, so that along toward summer the channel is reduced to a depth, as I say, of 20 feet. They get along fairly well on 22 or 23 feet of water.

Mr. DEMPSEY. Well, now, that is out of proportion to the bill, considering the tonnage and the size of the harbor. While a good harbor, it is very much out of proportion. You see, that would be \$250,000 plus \$100,000, which would be \$350,000.

Gen. TAYLOR. That is for the next two years.

Mr. DEMPSEY. Well, they are all for the next two years?

Gen. TAYLOR. Yes; certainly.

Mr. DEMPSEY. This is just the same as the others?

Gen. TAYLOR. Certainly.

Mr. DEMPSEY. What has the average been for the last five years, Mr. Clerk?

The CLERK. \$100,000 a year on Coos Bay for maintenance.

Mr. DEMPSEY. Well, now, let's see. If you had \$100,000 a year, and you have on hand \$150,000, and call this two years——

Gen. TAYLOR. No; we have on hand \$160,000.

Mr. DEMPSEY. Yes; \$160,000. Well, we will call it \$150,000, for round numbers. At the rate of two years, you ought to have \$250,000. That is, you ought to have \$100,000 besides what you have, to be in line with the appropriations.

Gen. TAYLOR. Well, I would like to call attention to the items on the top of page 1812.

Mr. DEMPSEY. I have gone through them.

Gen. TAYLOR. You see, you have there the operation of the dredge *Machie* for 11 months, \$137,500, and care of the dredge four months, \$14,000, making \$151,500 for 15 months—that is, from the 1st of April, 1921, to the 1st of August, 1922.

Then, repairs, \$20,000; oil tank, \$25,000. It is necessary to build that oil tank in order that we may obtain a supply of fuel oil for the operation of the dredge and obtain it economically.

I would suggest adding those two items, \$20,000 and \$25,000 to the \$100,000, which has been the ordinary operating expense, making it \$145,000 instead of \$215,000, and also omitting the item of \$40,000 for further improvement.

Mr. DEMPSEY. All right; let us put it tentatively at \$145,000.

Mr. SMALL. All for maintenance.

Gen. TAYLOR. All for maintenance. That reduces the estimate \$110,000.

Mr. DEMPSEY. Well, now, those two \$3,000 items, I take it, you think you need?

Gen. TAYLOR. Yes; those are small snagging propositions.

#### YAQUINA BAY AND HARBOR, OREG.

Mr. DEMPSEY. Now, we come to the Yaquina Bay and Harbor. That seems to be a nominal tonnage, and does not seem to be deserving of any considerable appropriation.

Gen. TAYLOR. That is a nominal tonnage, because they have not a channel in that harbor that is useful.

Mr. DEMPSEY. Let us see what they have. The existing project is for two rubblestone jetties at the entrance, 1,000 feet apart at the end of the north jetty; the north jetty to be 3,700 feet in length, and the south jetty 5,800 feet in length, and to project seaward about 800 feet beyond the end of the north jetty; a spur jetty based on the channel side of the south jetty 2,500 feet from the sea end, 800 feet in length, to deepen the channel across the inner bar between the jetties; the removal of rock from the outer bar reef to secure a depth of 20 feet at mean low water in the entrance, and for a channel 200 feet wide and 18 feet deep from the entrance to the railroad terminus at Yaquina, a distance of 4.5 miles.

Now, let us take it at the end of the year.

Both jetties have been considerably beaten down by winter storms; channel width between the jetties. It does not give the ruling depth.

Gen. TAYLOR. Well, in the "Original condition" it states the depth over the bar varied from 7 to 8 feet at low tide and 3 distinct channels existed.

Then it states under "Condition at the end of the fiscal year":

The result of the jetty construction under previous projects is a net gain of 5 or 6 feet of controlling depth in a more permanent channel across the bar.

If you add that 5 or 6 feet to the original depth you get 12 to 14 feet, so that the depth at the end of the year was apparently 12 or 14 feet.

Now, I would like to call your attention to the paragraph "Local cooperation."

Mr. DEMPSEY. I see that. Go ahead.

Gen. TAYLOR. Now, as a matter of fact those people down there have sold the bonds and raised the money anticipating that the Government would adopt this project. They have gone ahead and spent a large part of that money. They have not waited for the Government to do its share, but they were so anxious that the work should be done that they actually have spent a great deal of the total amount that they are required to contribute.

Mr. DAVIS. How much was that?

Gen. TAYLOR. They had spent \$382,000 up to the end of the year.

Mr. DEMPSEY. Mr. Hawley is here now. We have your proposition up now, Mr. Hawley. Your average expenditures have been \$100,000, and you have \$160,000 on hand, but this bill really provides for two seasons and we are taking that into account on all of the items, and the disposition is to give you something beyond the average expenditure for the past five years because it is a good harbor and good tonnage.

Now, you have a totally different condition with your Yaquina Bay and harbor. Your tonnage is merely nominal, and under present financial conditions and the way other projects are being treated throughout the United States, it would be utterly impossible to appropriate anything like the amount estimated for a harbor with a nominal tonnage.

**STATEMENT OF HON. WILLIS C. HAWLEY, MEMBER OF CONGRESS  
FROM OREGON.**

Mr. HAWLEY. Now, Mr. Chairman, the people on the Yaquina River have organized two ports, one at Toledo and one at Newport. One is on the river and one is on the bay. They are cooperating, however, for the improvement of the bay entrance.

The original estimate for the construction of the north and south jetties has been increased by reason of the increased cost in material and labor owing to the rise in prices due to the war.

The people have pretty nearly completed the south jetty.

This project was adopted by the committee and Congress in the last bill you reported, and an appropriation of \$100,000 was made.

Mr. SMALL. That was the 1919 bill.

Mr. HAWLEY. Yes; that passed the last House, containing the new project.

Mr. DEMPSEY. Yes; I understand.

Mr. HAWLEY. Upon the faith of that the people there have gone on with their work since that time. They have expended about half the amount that the estimate called for before the adoption. Since that time they have expended a great deal more. I was over the jetty this year.

Mr. DEMPSEY. How much did you say they had spent?

Gen. TAYLOR. \$382,000 up to the 30th of June.

Mr. HAWLEY. I was over the jetty this year. They have done exceedingly good work. The rock is large in size and durable in quality. The piling they have driven in have been well driven, and of large size.

Now, the engineers this last fall, before undertaking expenditures of the \$100,000 appropriated by the Government, required the ports to sell the remainder of their bonds and deposit the money with the Government to meet the increased cost over the original estimate that the ports would have to provide for. I understand that has been done and the money is now in the hands of the Government.

Gen. TAYLOR. That has been done within the past three weeks.

Mr. DEMPSEY. How much, General?

Gen. TAYLOR. The estimated total cost is about \$1,518,000, and the ports are going to put up half of it, \$759,000 altogether.

Mr. DEMPSEY. They have deposited that amount?

Gen. TAYLOR. They have either contributed that in work or in money. They have met that condition.

Mr. HAWLEY. They have been credited on an appraised basis for the work already done, and the balance above that credit has been paid into the hands of the Government in money, and they have sold their bonds.

Mr. DEMPSEY. I see.

Mr. HAWLEY. Now, the people have outstanding, then, according to the figures Gen. Taylor has given, \$750,000 in bonds, which is a tax on the ports and the country tributary.

The mills were doing very well until the slump came in the lumber market. Of course, they are not doing so much now.

You have mentioned the tonnage there. This is a case where there will not be very much tonnage until they get the water. The Gov-

ernment mill, built at Toledo, was sold this last summer and acquired by a private company which intends to install the machinery and operate the mill. They bought the Blodgett tract of timber, and the railroad, about 35 miles long, on the south side of the river, and they own a great deal of other timber. The taxes on that timber for county and school and State taxes are so heavy that they will be compelled to operate the mill and to cut their timber and ship it in order to not suffer a loss on their investment.

There are two other mills at Toledo. One is being built on the same tract of land that the Government mill is located on; that is, on the same general tract. They own a very large area of timber in that country. I had a letter from Mr. Johnson, who represents very large timber holdings in that section, and he said that as soon as the water was in condition for them to move up cargoes that would justify the building of a mill, they were prepared to build, as they had stated to the engineers when the hearing was had before the Board of Engineers in the Southern Building.

There is a mill proposed on the bay, depending on the water.

The channel has been improved by the south jetty. With the construction of the north jetty, and the cutting out of some points of soft rock that run out across the channel part way from the north side, they will have no one knows how much water because as soon as you cut out this rock there is a layer of sand the current will scour out and they will get all of the water they need with the proposed expenditure here.

By the way, this is an interesting rock. It contains an oyster called the rock oyster. He lives in the rock and is a very edible product. It is a very soft rock.

Mr. SMALL. It would require a miner, though, it seems to me to get them.

Mr. HAWLEY. Well, you can chop them out with an ax; I have chopped out many of them.

Mr. SMALL. That is very interesting.

Mr. HAWLEY. Now, when this project was proposed they endeavored to make clear that it was a project in which the tonnage over the bar could not be, in the nature of the case, large until the water was obtained to move the tonnage.

I inquired about ships. I was informed that one of the companies will build a large ship, one that will move out 2,000,000 or more feet of lumber. I understand the corporation that obtained the Government mill and the southern holdings is ready to build for its own use.

I understand also that the railroad into the tract that lies to the north has been or will be sold in a short time, and they will want to move their timber.

The situation is they have about 39,000,000,000 feet of timber in that locality tributary to the waterway, and the people who have their money invested in the timber are the people who are paying a very large proportion of the interest and the bonds the ports have issued. They have put their money into the timber, they have put their money into the mills, and they have put their money into the improvement of the waterways in order to get their timber out to the market.

They have gone their limit. The assessed valuation will not justify them in putting up any more money than they have, but the Government has adopted the project and has encouraged them to believe that the project would be carried on.

Gen. TAYLOR. That mill you speak of as the Government mill was one of the spruce mills, was it not?

Mr. HAWLEY. Yes; and it is a very substantially built mill. All of the machinery is in the mill except some things that had to be shipped inland, some fine machines, to prevent rust by the salt air when they were not in actual use in the mills. They were boxed up and they thought it better to ship them inland to prevent them rusting until needed for use. They have a splendid plant for power; they have all of the power they need.

The people of Toledo in order to help the Government when it was constructing that mill, voted, I think, \$50,000 in bonds to put up a water system to furnish water all through the mill and all over that plant for the use of the mill and the soldiers that were engaged in spruce production. The people have shown the utmost good faith in the matter; they have complied with every requirement of the Government. Now they want the project completed so they can move their timber, get back their investment, operate their properties, or else the whole county is going to be in a very bad shape. They have an enormous burden. Some of the bonds, the last bonds, sold for 6 per cent on the market.

Now the labor conditions there for the work are favorable.

Mr. DEMPSEY. You made a good sale.

Mr. HAWLEY. Yes; they did make a good sale, but at 6 per cent, you can see the burden, it is on the taxpayers. Five per cent sometimes represents all of the profit a man might make on the venture.

Now, the labor conditions have been favorable, and will be. The country is a new one, and is filled with settlers and homesteaders who work part of the time, leaving their families on the farms while the crops are growing and go to work for money to buy materials and supplies, and it is a continuous supply and they do not ask very high rates. I made special inquiry about that. They do not ask the high rates that prevail elsewhere.

So the work can be done now as cheap as it can be done for some time to come, because these men prefer not to go long distances and leave their families. They want to work in the mills there where they can walk home every Saturday night.

Mr. DEMPSEY. Do you know, Mr. Hawley, how much lower labor is there than elsewhere, or than on the average, I mean?

Mr. HAWLEY. Well, I should say, from inquiries I made there and elsewhere, it is more than 30 per cent lower; probably 40 per cent. I made inquiries generally, because I am interested in that problem. It is a very essential factor in the consideration of these conditions. We just had a hearing before the Committee on Ways and Means, and we find the labor cost represents 50 to 80 per cent of any commodity produced. So, if there is any thought of postponing construction by reason of the fact that in a year or two from now we could get labor cheaper, I do not think it would apply to this case at all.

Mr. DEMPSEY. Well, you have made a very strong argument for the case, Mr. Hawley. You can see, not knowing all of the factors to which you have called our attention, it struck us as not being proportionate, because of the tonnage, and it was entirely out of proportion to the tonnage, because of the fact we are having to cut in this bill.

Mr. HAWLEY. Yes; I understand.

Mr. DEMPSEY. But you have stated very exceptional circumstances, and I think the very good faith of the Government is involved in doing the work with reasonable promptness, and I think that should be taken into consideration in dealing with the amount of the appropriation.

Mr. HAWLEY. Yes; it is an exceptional case. It is like the copper mine in the mining district in the southern part of the State. Enormous quantities of copper were found there; in preliminary work one man expended \$65,000—a New York man, by the way—and blocked out tens of thousands of tons of material and had 13,000 feet of shafts and tunnels, but on account of the transportation conditions he could not operate his mine. They have built a railroad part of the way down from Grants Pass and a good road the rest of the way, so they use automobile trucks, and they are beginning to develop those mines. They could not have any tonnage there until they had transportation; Jayuma is a similar proposition; the tonnage will develop with the transportation. The people have the timber; they have the mills; and they want to cut the timber; and they will build boats to handle it.

Mr. DEMPSEY. What is it they have besides the timber?

Mr. HAWLEY. They have mills. The mill built by the Government can cut 500,000 feet or more a day. Other mills can raise that to 650,000 feet a day, but suppose they only cut 400,000 feet a day; 400,000 feet is 600 tons, and in a year it would make quite a considerable tonnage, prior to the building of other mills.

Mr. DEMPSEY. Have you any railroad there?

Mr. HAWLEY. There is a railroad runs in from the Willamett Valley, leaves the main line from Portland to San Francisco at Albany, about 90 miles south of Portland.

Mr. DAVIS. Only one railroad in there?

Mr. HAWLEY. Only one railroad in there now. There is another road that comes in from Portland, toward the north end of the county, but has not been built through to the coast yet; but the profits in lumber for the Pacific coast, on account of the increased freight rates, will come chiefly from water transportation. They have increased the freight rates on us 25 to 33 per cent, and a very long haul makes it very hard work to compete with eastern lumber. The people when they undertook the development of the waterway never anticipated, of course, any increase in freight rates; I think no one did, but we have them, and it is another bar to our getting to the eastern markets. We must have a water outlet to get to markets all over the world.

The people along the Pacific coast, in order to furnish lumber in the East at reasonable rates, are building yards in New York and in points adjacent to New York. That developed in a hearing that Gen. Taylor and the board held at Marshfield when on their western trip. I asked how much less they could sell all grades of lumber

for on the average to the people of New York or the Atlantic coast generally if they could get water transportation and was informed that western lumber could be sold at Atlantic ports for \$15 per thousand less than the eastern lumber sells for. The difference might be greater. We have in the Pacific Northwest about 900,000,000,000 feet of lumber, enough to supply the needs of the Atlantic coast for an indefinite period.

Mr. DAVIS. Billions, not millions?

Mr. HAWLEY. Billions of feet, and it will be of distinct advantage to the people of the East to get this material. The Douglas fir is the finest building timber in the world. In proportion to its weight it has greater strain strength than any other wood, and you can get it in any length you want it.

Mr. DAVIS. Including sugar pine?

Mr. HAWLEY. The sugar pine is rather brittle. Douglas fir is our principal growth, and we are not alone interested in these propositions on the coast, because with the improvement of water transportation the chances are better for sending cargoes around to the east coast; we can get lumber here at prices greatly below what are now being paid.

Mr. SMALL. Mr. Hawley, did you want to say anything specifically about the Columbia and Willamette Rivers?

Mr. HAWLEY. Well, I understand there is no question about the Coos Bay proposition.

Mr. DEMPSEY. The Coos Bay proposition figured out this way, Mr. Hawley; they found that the average maintenance there had been for the last five years \$50,000.

Mr. HAWLEY. It was more than that in the last year; the project has been deepened from 16 to 18 feet.

Mr. DEMPSEY. Well, here is what we have tentatively in mind to do. You have \$160,000 on hand, \$100,000 in cash and \$60,000 in contracts, and we propose, tentatively, if we can do that, to supplement that by giving you \$145,000, which will give you a little over \$300,000.

Mr. HAWLEY. Well, if Gen. Taylor thinks that will complete the work. I see an estimate here for new work.

Mr. DEMPSEY. That is Gen. Taylor's suggestion, and we have put it down tentatively on his suggestion.

Mr. HAWLEY. Well, if he thinks that will accomplish the work, cut the chanel down to the 18-foot depth, complete the work, and maintain the channel that will meet the situation.

Mr. DEMPSEY. We are going to do that if we can. if this bill will permit it. That is about the idea, is it not, Mr. Small?

Mr. SMALL. Yes.

Mr. HAWLEY. Well, I hope you won't go below that, or will not go below a sum that will keep the channel open.

Mr. DEMPSEY. Now, on this Yaquina Bay you have \$100,000 now, you see.

Mr. HAWLEY. Yes.

Mr. DEMPSEY. And we will talk over all of these facts with regard to your Yaquina Bay with Gen. Taylor and see what we can do on that \$350,000. You have enlightened us a great deal, and we are under very great obligation to you. We are very glad you came in.

Mr. HAWLEY. I am very much obliged, indeed, to the committee for their kindness. As to the Willamette River—that is, south for about 120 miles up the river—the principal tonnage on the river is between Portland and Oregon City. The mills at Oregon City use great quantities of materials in the making of paper, and they must have the depth of water provided in the project.

Mr. DEMPSEY. What is the project depth there?

Mr. HAWLEY. I think it is 6 feet.

The CLERK. Six feet from Portland to Clackamas Rapids, and 6 feet thence to Oregon City.

Mr. HAWLEY. They must have that depth or else they can not get up their material. I remember one summer we had no money to keep the channel open, and they first dragged the vessels up by tying a rope to a tree and then pulling them along on the bottom by their own power; that was expensive and they had to use the railroad, which greatly increased the cost to the mills on their products. I think one mill told me that it cost them in additional amounts about \$20,000 in one year in freight.

Above Oregon City there has always been boat service that is of very great importance to us. One new boat has been built and there is one or two more to be built and put on. When the boats are running we get a fair rate to Corvallis and way points; that is one great service of water transportation, and then to the next stage of about 35 miles, to Eugene, the railroad rates almost double. When the boat went off by reason of some obstruction in the river—I forget exactly what now—the charges went up; and if the boats are not running at any given time the fact that they can be used and are used to some extent, is a great protection to the people of the valley in the matter of rates; but the boats are using it, and I was told by a corporation this summer that has operated boats there that they have built one new one and intend to build another, and another corporation intends to put a new one on, and I think the amount estimated is about sufficient, under the circumstances, to carry on the work. It was \$25,000 to \$35,000 heretofore, and in the increase in the estimate will just about account for the difference in the cost of the work to be done.

Mr. DEMPSEY. All right; we will take that up.

Mr. HAWLEY. Just one word about the Columbia River. I think the committee is so well informed on that—

Mr. SMALL. That is the Columbia River below Portland?

Mr. HAWLEY. Yes. You are so well informed on that that I will only say a word.

The people of Portland keep the river open from Portland to the Columbia, which is 12 miles on the Willamette River. They do that at their own expense. Then there is this distance from the mouth of the Willamette River, a little over a hundred miles, which has always been maintained by the Government with the exception of one period when the people there helped the Government out in an emergency and gave quite a considerable sum.

I believe the people of Oregon, Mr. Chairman and gentlemen, have done more for the river and harbor development of their section of the country than any other part of the Union by furnishing about half of the costs of the improvements. If the rest of the country had put up



proportionately as much money as we have the waterway development program would be far advanced. We have provided about \$10,000,000 or \$11,000,000, as the figures run in my mind now, in the last 10 years for the development of the rivers and the harbors on our coast.

Mr. SMALL. Are you speaking of the whole coast of Oregon?

Mr. HAWLEY. The western coast of Oregon, including the Columbia River—and if all the rest of the country had been compelled to supply money on a 50-50 basis, we would have been very far ahead with our harbor improvements. We do not come to you with empty hands and ask you to help us. We come to you after we have gone the limit of our ability. The people of Portland and Astoria have put in a great deal of money in improving the Columbia River and in building public docks. Gen. Taylor, I think, can testify to their efficiency. The public dock construction and the tonnage on the river is very large and will continually increase as the years go by. It must, necessarily, because it will be the great trading center of our country. The Columbia River is the only river on the whole Pacific coast from Alaska till you get to the Golden Gate that breaks through the Cascade Mountains, both the coast range and the Cascade Mountains, into the great interior country, and it is a natural outlet for eastern Oregon and Washington and western Idaho, as well as western Oregon and the valleys east of the Cascades, and I think that project and the tonnage it has and the enterprising people concerned should have the consideration of your committee.

Mr. DEMPSEY. Thank you very much, Mr. Hawley.

Mr. HAWLEY. I appreciate the courtesy of the committee.

Mr. DEMPSEY. Now, General, we will get down to the \$100,000 on hand and \$350,000 suggested.

Mr. SMALL. That is the Yaquina Bay and Harbor.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. The question is what should we do with that under the circumstances.

Mr. HAWLEY. May I make another remark, please?

Mr. DEMPSEY. Yes, Mr. Hawley.

Mr. HAWLEY. On the Yaquina River as well as elsewhere the Government owns a great deal of timber, and any improvement made there increases the value of that timber when it is sold, and if these improvements are made and the timber sells, as we hope it will—that is, in reasonable quantities—we will get back the money into the Treasury within a period of time that is reasonable.

Mr. SMALL. Is this timber or original reservations of land held by the Government, or something recent?

Mr. HAWLEY. The Government reserved, when they gave us our Statehood, all of the public lands in the State not previously disposed of except the sixteenth and thirty-sixth sections in every township, which they gave us for school purposes.

Mr. SMALL. And the timber you speak of is on some of those reservations?

Mr. HAWLEY. Yes, sir.

Mr. DEMPSEY. Land that the Government reserved when you became a State?

Mr. HAWLEY. Yes.

Mr. DEMPSEY. Thank you very much.

**STATEMENT OF GEN. HENRY TAYLOR.**

Mr. DEMPSEY. Now, what about this, under the circumstances?

Gen. TAYLOR. Well, under the circumstances we ought to have as much as we can reasonably use within the next year.

Mr. DEMPSEY. Well, what do you say that is?

Gen. TAYLOR. I think probably that could be cut \$100,000 and make it \$250,000.

Mr. DEMPSEY. Could you cut that safely to \$200,000? That would give you, with the \$100,000 on hand, \$300,000.

Gen. TAYLOR. \$200,000? I think that could be safely done.

Mr. DEMPSEY. That makes your total in the first column \$151,000, the total in the next column \$200,000.

Gen. TAYLOR. Yes.

**COLUMBIA RIVER AND TRIBUTARIES ABOVE CELILO FALLS TO THE MOUTH OF  
SNAKE RIVER, OREG.**

Mr. DEMPSEY. Well, let us finish this page, General. \$32,500 Columbia River and tributaries above Celilo Falls to the mouth of the Snake River, Oreg. That traffic is absolutely nominal, 386 tons?

Gen. TAYLOR. I would suggest you cut it all out.

Mr. DEMPSEY. Don't you think that in this kind of a bill such traffic as that we can cut out?

Gen. TAYLOR. I think you should, under the present circumstances. There is absolutely no commerce on that part of the river and I do not see any immediate prospects.

Mr. DEMPSEY. It is problematical?

Gen. TAYLOR. It is problematical, and this little amount that is contained here for continued improvement and maintenance really gets nowhere.

**SNAKE RIVER, OREG., WASH., AND IDAHO.**

Mr. DEMPSEY. Now, the next item is \$5,000 for maintenance of the Snake River and \$33,000 for further improvements. That has considerable commerce?

Gen. TAYLOR. There is considerable commerce between Riparia and Lewiston. That \$5,000 maintenance is required and I would suggest that that be given.

Mr. DEMPSEY. And omit the \$33,000?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Now, that brings your totals there to \$5,000 for maintenance and nothing for further improvements.

Gen. TAYLOR. Yes.

**COLUMBIA AND LOWER WILLAMETTE RIVERS BELOW VANCOUVER, WASH.,  
AND PORTLAND, OREG.**

Mr. DEMPSEY. Now, what have you to say about the Columbia and Willamette Rivers below Portland?

Gen. TAYLOR. In my opinion, if any amount should be allowed, this should, in view of the letter from the district engineer dated Decem-

ber 8, in which he asked it be increased \$45,000, the reason for that being the increase in the cost of fuel which has taken place since the estimate was submitted in June, oil having gone up, and also hog fuel. Probably Mr. Davis knows what that is.

Mr. DAVIS. Never heard of it at all.

Gen. TAYLOR. Well, it is refuse from the sawmills, that is, it is slabs and sawdust and shavings, and everything of that kind goes in and it is ground up.

Mr. SMALL. Because the hog grinds it?

Gen. TAYLOR. It is done by a hog machine. Formerly it had little value, but recently, because of the demand for it, the price has gone up and it is steadily going up, and, due to the increase in those two articles of fuel, oil and hog fuel, the district engineer asks that the estimate be increased by \$45,000.

As Mr. Hawley explained, the project for the lower Columbia and Willamette Rivers is a cooperative project. The condition under which it was adopted provided for the maintenance of the channel in the Willamette by the local interests and the maintenance of the channel in the Columbia River by the United States. Recently, in order that the work might be more economically and more advantageously conducted, we have combined our plant with the port of Portland plant. They had about the same plant we had, and we are working all of the plant on the work where most needed. In that way we keep a better channel throughout the year than we could if we each stuck to our own little piece. As a matter of fact, it requires them to put as much money into the channel, and perhaps they are putting a little more in than the condition requires.

Mr. DEMPSEY. Mr. Clerk, what has been the average expenditure for the last five years?

The CLERK. \$300,000 for maintenance and \$70,850 for improvements.

Mr. DEMPSEY. \$370,000. Now, we have \$163,000 plus \$27,000 on hand.

Gen. TAYLOR. But for the last three years, Mr. Chairman, the maintenance items have been \$315,000, \$371,000, and \$415,000—for the last three years—and it is largely a dredging project. Of course, in 1916 the costs were much lower. The price of dredging has about doubled since that time, and I do not believe that the items as they are now in the estimate are any too large to maintain the project channels.

Mr. DEMPSEY. Well, Mr. Hawley told us that the labor out there was one-third less.

Gen. TAYLOR. That is down the coast. That is not in Portland, and that does not affect the labor on our dredges at all. As a matter of fact we have, since June, had to increase the wages of our labor on the dredges in order to hold crews at all.

Mr. DEMPSEY. Well, what do you think should be done there?

The details, page 1858, are operation of these dredges. That is what it amounts to—construction of some pipe-line pontoons.

Gen. TAYLOR. Construction of dikes, also.

Mr. DEMPSEY. That is new work.

Gen. TAYLOR. That is new work. Now, the new work, Mr. Chairman, that we have done has been very successful. There are a num-

ber of places in the river where the river spreads out and shoals badly each year. We have built some dikes there in the last couple of years, and they have been very successful in enabling us to maintain a channel better than we have ever done before.

Mr. DEMPSEY. That is the best reason you have advanced for reducing your maintenance item.

Gen. TAYLOR. Yes; but we have not got far enough to maintain them and reduce the channel maintenance. As a matter of fact, we have never had throughout the year a channel of project dimensions. They are using every foot of depth they have.

Mr. DEMPSEY. What proportion of that dike system have you got of what you intend to build?

Gen. TAYLOR. Well, I do not think I can tell you that.

Mr. DEMPSEY. Approximately.

Gen. TAYLOR. That whole dike system is more or less of a tentative project. That is, the original project provided for a dredging project with the construction of certain dikes, and then to extend that dike system if those we put in were successful. Those we put in have been, as I said, very successful, so that until we have gone along a few years longer with our dike system I should not want to say just how many dikes we would want to put in. In other words, we want to go as far with it as we can economically and advantageously. There is a limit beyond which it does not pay to build dikes. You get to a point where the interest on the cost of the dikes is more than it would cost to dredge your channel. When we reach that stage we stop building dikes.

Mr. DEMPSEY. Now, what do you think about this, Mr. Small?

Mr. SMALL. It is one of the things that creates an embarrassing condition for the subcommittee on account of the necessity of economizing. It is an important port; the tonnage there amounts to 5,000,000 tons. It is an expensive piece of property to maintain, and if we would cut out the new work we are confronted with the proposition that the construction of these dikes would reduce the cost of maintenance. If we cut out the maintenance item, we stop the operation of the dredges.

Mr. DEMPSEY. If we knew, Mr. Small, approximately what percentage of this dike construction we have and what it has saved, then we would have something upon which to base an estimate as to the maintenance. The maintenance has been about \$370,000.

Mr. SMALL. I believe the only chance of economizing would be to cut out the construction of those dikes.

Gen. TAYLOR. By taking the project items I could probably work out what percentage of the dikes have been constructed. Of course, there were estimates for a certain amount of dikes and a certain amount of construction when the project was estimated, but it was, of course, tentative.

Mr. DEMPSEY. What do you gentlemen say about cutting that maintenance item down to \$400,000 and leaving the other \$110,000 just as it is; give them \$510,000?

Mr. DAVIS. That is satisfactory to me.

Mr. DEMPSEY. What do you say to that, General?

Gen. TAYLOR. I think that would very seriously embarrass us, Mr. Chairman; I should much rather see the maintenance item remain

as it is and cut out the further improvement rather than to see the maintenance item reduced.

Mr. SMALL. Suppose, Mr. Chairman, in the interest of economy, as offering the most feasible way of economizing, we give them \$675,000 and cut out the \$110,000?

Gen. TAYLOR. Suppose you leave out the \$110,000 and let it read for continuing the improvement and maintenance. If we then find we can maintain it for any less than for \$675,000 we might be able to do a little dike work, but I am a little skeptical about our being able to save anything on that. I know what the conditions are, for the reason that I was there very recently. I was up there in October and know what the conditions are.

Mr. SMALL. Constant dredging is necessary.

Gen. TAYLOR. It is constant dredging.

Mr. DEMPSEY. Yes; but you must remember this. Our western Members tell me that that section of the country is hit very hard by this depression, and I should think that would cut your costs very considerably. You are figuring on your peak time?

Gen. TAYLOR. No; I am figuring, Mr. Chairman, on the information I have here in the letter dated December 8.

Mr. DEMPSEY. I know that, but nevertheless I think that even since December 8 the conditions out there have changed.

Mr. SMALL. If this were promiscuous labor, I think perhaps you might be right, but the rate of compensation for labor on the dredges has not increased proportionately during the year, and as a result you have been obliged to suspend sometimes because you could not get the labor.

Gen. TAYLOR. Yes; frequently.

Mr. SMALL. There is not much probability of the labor on the dredges decreasing.

Gen. TAYLOR. Certainly not at the same rate it will on this other work. For instance, Mr. Hawley spoke of the conditions down in this lumber section on the coast. The towns are isolated localities. As he said, the labor hates to leave there and hates to leave their families, and as those mills close down they are willing to do almost anything at very much less, but you take it around Portland, particularly on the river, I doubt if the labor has decreased very much at this time, if any.

Mr. SMALL. Simply as a matter of public duty I would rather take off something else.

Mr. DEMPSEY. Well, suppose we leave that tentatively at \$675,000. Now, the next item of any size is \$66,600.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What do you say about that?

Gen. TAYLOR. I think that should be granted also. Mr. Hawley explained very well the conditions up there. I know, personally, from having been connected with that for several years, what the conditions are, and I fully agree with Mr. Hawley as to the desirability of keeping that river open.

Mr. SMALL. Could you not get along with \$50,000?

Gen. TAYLOR. I think we could get along with \$50,000.

Mr. DEMPSEY. Do you need that \$10,300, or can that be cut out?

Gen. TAYLOR. I should think that could be cut out.

Mr. DEMPSEY. All right.

## WILLAPA RIVER AND HARBOR, WASH.

Mr. DEMPSEY. The next is the Seattle district, Willapa River and Harbor.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What is that for?

Gen. TAYLOR. That is a dredging operation.

Mr. DEMPSEY. You have made a continuing contract there, have you?

Gen. TAYLOR. No, sir; we endeavored to make a contract, but we could not get any reasonable prices, so we transferred a Government dredge of our own to that harbor and are doing the work with our own equipment.

The conditions of the project have been met—that is that they should make certain dumping arrangements and make certain payments. All of those conditions have been met.

Mr. DEMPSEY. Now, what about the \$52,050. Under the circumstances, do you think that should be granted?

Gen. TAYLOR. I think it should. It is vitally important because in the sundry civil bill the committee did not give us the \$247,000, they cut it all out.

Mr. SMALL. I did not know they ever cut anything at all out?

Gen. TAYLOR. Well, we never knew them to do it before, but they did this time, and also another item in there on the upper Hudson Channel, which is very important. All of that commerce going through the barge canal and all of that commerce on the upper Hudson River, 3,000,000 tons per year, is affected, but they cut it from \$235,000 down to \$100,000. We are going to be very much embarrassed, I am afraid, on that.

Mr. DEMPSEY. You see here it is expected the requirements of the law will be complied with at an early date?

Gen. TAYLOR. They have all been met.

Mr. DEMPSEY. They have?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. What do you say about that?

Gen. TAYLOR. I should like very much to see that \$52,000 allowed. We have our own plant up there, and it would be a considerable expense if we did not have the money to operate it.

Mr. DEMPSEY. You have \$93,000 on hand?

Gen. TAYLOR. Yes; but it will take more than that.

## GRAYS HARBOR.

Mr. DEMPSEY. Now, your next item is \$600,000 for Grays Harbor.

Gen. TAYLOR. That is for the purpose of constructing a sea-going harbor dredge. It will take more than the \$600,000; it will take \$750,000 to construct the dredge. This estimate was submitted by the district engineer last June before we had the plans of our dredge completed.

Mr. SMALL. General, I am fairly familiar with that, and we have been postponing that on account of advancing prices and war conditions for several years. Can we not, without undue injury to the commerce, defer that until the next bill?

Gen. TAYLOR. I think, Mr. Small, it would be a very good time at the present time to advertise those dredges, because I am satisfied that with the depression there is in the shipbuilding business at the present time there will be great competition for them.

We had an example of that recently. Some four or five months ago we opened bids for some steel scows for use in the Philadelphia district on the Delaware River. At that time we had only two or three bids, and they were so high we rejected them all. Between two and three weeks ago we opened bids again, and that time we had 16 bids, of which the lowest was \$23,000 below our estimates given in this report, and there were a number of others that were very close, and the bidders were all around looking to see if they could get that contract. The low bidder was right after it, the others were also right after it, hoping something would turn up that the low bidder would not get it, so a very great change in conditions was apparent in three months.

Mr. DEMPSEY. I think that is true, but on the other hand the suggestion of Mr. Small is that the situation as to commerce may not be injured by deferring this until the next bill.

Gen. TAYLOR. Well, I think it is probably explained in here what has happened there at Grays Harbor within the past year. The two principal towns on the Harbor, Hoquiam and Aberdeen, have formed a port; they have bonded themselves very heavily for the purpose of building docks and terminals, and they have agreed to take care of all the channels inside of the harbor if we will take care of the harbor entrance, which is a very generous proposition.

Mr. DEMPSEY. Suppose we omit that for the present in our estimates.

Now, gentlemen, I do not think we will finish to-night, and suppose we adjourn now until 10.30 to-morrow morning.

(Whereupon at 5.35 p. m. the committee adjourned to meet at 10.30 o'clock a. m. January 18, 1921.)

---

TUESDAY, JANUARY 18, 1921.

#### PUGET SOUND AND ITS TRIBUTARIES.

Mr. DEMPSEY. The first item, General, is Puget Sound and its tributaries, Washington; an estimate of \$35,000 for maintenance, with \$16,000 cash on hand; what have you to say about that?

Gen. TAYLOR. The project covers a number of small streams running into the Puget Sound, all of which require more or less snagging work, and that is purely a snagging proposition.

Mr. DEMPSEY. On page 97 is an appropriation for snagging of \$3,000.

Gen. TAYLOR. There is considerable commerce on these streams, and unless snagging is kept up the rivers would soon become clogged with snags so as to absolutely prevent navigation. The average expenditures for this are about \$20,000 per year.

Mr. DEMPSEY. Has there been any unusual accumulation of snags; that is, are conditions such that it requires more work now than usual?

Gen. TAYLOR. No, sir; but the expenses are somewhat greater. This would give them only a little more than the average.

Mr. DEMPSEY. General, do you think, under conditions as they are at present, that we can safely cut down to the average?

Gen. TAYLOR. No, sir.

Mr. DEMPSEY. What were the estimates for the last three years?

Gen. TAYLOR. The last three years were \$22,700, \$21,900, and \$18,000; the estimate is at about the rate of \$2,000 per month.

Mr. DEMPSEY. You have \$16,000 cash on hand?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. Add your \$16,000 to the \$25,000 and you would get an average of over \$20,000 per year for the two seasons. Would not that take care of it fairly?

Gen. TAYLOR. It probably would.

#### LAKE WASHINGTON SHIP CANAL, WASH.

Mr. DEMPSEY. The next item, Gen. Taylor, is \$125,000 for further improvements on the Lake Washington Ship Canal, Wash. You have \$284,000 on hand in case; what do you say about that?

Gen. TAYLOR. That additional sum is necessary.

Mr. DEMPSEY. This project for a double lock and fixed dam about one and one-quarter miles from deep water in the Puget Sound; the channels to be 30 feet deep and 150 feet wide; for revetments to the canal banks and excavation by private interests of a channel 75 feet wide and 25 feet deep from the locks into Lake Washington. The contract is about 80 per cent complete; the locks and dam have been completed I see.

Gen. TAYLOR. Yes, sir; except on the emergency dam.

Mr. DEMPSEY. What do you mean by an emergency dam?

Gen. TAYLOR. I mean the apparatus for controlling the water in case the gates should be carried away by an accident; for instance, a boat coming into the lock and getting out of control might go through gates, which are in the condition that these are in now. We have no way of shutting off the flow of water until the lock would be lowered to the level of the ocean except by what expedients we put in there and it would take a considerable time to do it, and while we were doing it there would be a considerable lowering of the lake by the heavy flow of water through the lock, and undoubtedly serious damage would be done to the entire project. Such emergency contrivances are always provided at all locks and dams everywhere; they have them at the Soo, on the Canadian side, and such an accident as I speak of happened there, one of the lake boats went through the locks on the Canadian side and carried the whole thing away, and but for the fact that they were able to shut the water off in a short time, great damage would have resulted. At the Soo they have double safety devices at that point. The original plan for this Lake Washington lock contemplated an emergency dam, but due to the excessively high price of steel since the lock has been finished, it has been impossible to install the dam and we have made no contract for it. We have had the matter up and our plans for one type of dam were completed and sent back for revision, but so far have not been approved, as they were looking for something that would serve the purpose at a less expense than would be called for by



the plans submitted. These plans are under consideration at the present time.

We have, as you see, a considerable balance on hand, and that is necessary for use in revetting certain banks of the canal. The canal was built there—not exactly through the center of the city, but through a thickly built-up section of the city—and unless the banks have this revetting they will be damaged.

Mr. DEMPSEY. Evidently our district engineer did not give you all the facts he should have. Turn to page 1912; they say there that they have a balance available for this proposition—that is, for the purpose of the installation of this dam—of \$192,000. Do they contemplate using all of this balance of \$192,000 for that purpose?

Gen. TAYLOR. That is correct.

Mr. DEMPSEY. And now you think you will need \$125,000 additional. That will make a total of \$317,000. Now, that estimate was made at the peak of high prices and it should be revised. What will your emergency dam be made of?

Gen. TAYLOR. Steel.

Mr. DEMPSEY. Well, I should imagine that the price of steel has dropped about 25 per cent.

Gen. TAYLOR. We can reduce that \$125,000 some.

Mr. DEMPSEY. You can probably reduce it by one-quarter of \$317,000. Your reduction will be on your entire amount because the reduction will be on the cost.

Gen. TAYLOR. A considerable portion of the cost of the dam is in the foundation, which we have not completed, but the cost of this foundation will also be less than it was last July. We have expected to work up plans for a dam that will be less expensive than it would have been last year, and for all these reasons the appropriation can be reduced. I would say that perhaps it would be safe to cut that in two and make it \$62,500 instead of \$125,000.

Mr. DEMPSEY. I think that would be about right.

Gen. TAYLOR. It is a very important thing; there is a considerable amount of commerce there and they are using the lock to the fullest extent.

Mr. DAVIS. What is the nature of that commerce?

Gen. TAYLOR. Largely lumber and its products and logging; they come from various points on Puget Sound and go through the locks to the mills above; there are also some good sized ships going through.

Mr. DEMPSEY. I should think that it would be reasonably safe to cut this amount and we will make it \$65,000 instead of \$125,000.

Gen. TAYLOR. Yes, sir; I should think that would be safe.

#### NOME HARBOR, ALASKA.

Mr. DEMPSEY. There is nothing else on that page, except \$10,000 for Nome Harbor, Alaska. You have \$32,000 on hand and \$14,500 for outstanding contracts. What can you tell us about that?

Gen. TAYLOR. That is probably used up, and I have here a letter from the district engineer at Seattle asking for \$20,000 more. The reason for that is that the work at Nome provides only for a very small harbor; it is in an exposed position, where it is subjected to the rough water and ice, and the work has been damaged twice by storms

during the progress of construction. This work should be done for the reason that it will enable shipments to be made into Nome without lighterage; the lighterage charge in the season of 1920 was \$14 per ton. The commerce for Nome in 1920 amounted to 15,352 tons, valued at \$5,515,169, and this showed a decrease of 2,297 tons and an increase in value of \$1,147,618.

The decrease in tonnage was largely due to the depreciation of trade with Siberia through the Anagyr River and the Kolyma River. Practically all the supplies were furnished from Nome and on the Anagyr River considerable trading was done from Nome. The letter from our engineer says: "In the annual report for 1920 the available balance for Nome Harbor was \$96,333.56, which was considered sufficient to complete the east and west jetties and dredge the channel. The estimate of \$10,000 for maintenance for 1922 was submitted. The revised estimate for 1920 was \$253,000, not including the dredging of the basin. During the fall of 1919 and the summer of 1920, severe storms injured and delayed the work so that all of the east jetty had to be practically rebuilt, and no work was possible on the west jetty except 13 bents on the shore end. Dredging of the channel was not practicable because of the noncompletion of the jetties. The funds available for continuing the work are \$32,991."

Mr. DEMPSEY. Is that an important section of Alaska and is this our principal seaport there?

Gen. TAYLOR. Nome is the only port in that section of Alaska.

Mr. DEMPSEY. This is an inner harbor of small depth?

Gen. TAYLOR. Of very small depth.

Mr. DEMPSEY. What do you recommend, General, take it all in all?

Gen. TAYLOR. I recommend this additional \$20,000.

Mr. DEMPSEY. Now, while I think this project commends itself to us, I should doubt the wisdom of granting them the full amount asked for.

Gen. TAYLOR. They need that additional \$20,000.

Mr. SMALL. This is such an isolated section and this is apparently the only port in that section to which vessels can come, and even then they have to anchor outside and have their cargoes lightered in, and it seems to me that from that standpoint it is desirable to have this project go on and be completed.

Gen. TAYLOR. It is the great trading port of that section of Alaska. Vessels have to anchor away off shore, and the only means they have to get their cargoes unloaded is by lightering them in, and passengers are taken off in small boats and brought in.

Mr. SMALL. I think we should follow the recommendation of the district engineer in regard to this particular item.

Gen. TAYLOR. I fully concur in that, and I think it will be economy to give it, judging from the experience we have had there.

Mr. DAVIS. With the amount you have on hand could you not get along without this \$20,000 at this time?

Gen. TAYLOR. No, sir. I have a detailed estimate showing what is to be done with the money on hand and what is estimated will be required in addition to that amount.

Mr. SMALL. The work is necessarily expensive in that remote section; it is in such an isolated part of Alaska.

Mr. DEMPSEY. You are going to ask \$10,000 for maintenance during the year; what is the rest for?

Gen. TAYLOR. For completing the jetties.

Mr. DEMPSEY. I think you had better give that to us in detail. Your report says: "It is estimated that \$10,000 will be required during the fiscal year ending June 30, 1922, for maintenance of the entrance channel by dredging."

Gen. TAYLOR. That report was written prior to the 30th of June, and we expected at that time to have money enough to complete the project, but subsequent to that time a storm occurred which greatly damaged the work.

Mr. DEMPSEY. And so far as this project is concerned you have only one year to provide for?

Gen. TAYLOR. That is all, and we want to finish it this year. All of that amount will be needed this summer. I have a detailed estimate.

Mr. DEMPSEY. Suppose you read that for the record.

Gen. TAYLOR. For completing work on the west jetty, material in addition to that on hand, \$16,000; travel and expenses, \$2,150; labor \$20,000; dredging channel, 7,000 yards, at \$2 per yard, \$14,000, or a total of \$52,150; amount available on November 30, \$32,991, leaving \$19,159, or in round numbers \$20,000 as the amount required.

Mr. DEMPSEY. What he requires is \$10,000 in addition to what you have on hand?

Gen. TAYLOR. No, sir; that is for the completion of the work.

Mr. DEMPSEY. Is not that 7,000 yards of dredging at \$2 per yard, or a total of \$14,000, is not that maintenance?

Gen. TAYLOR. That might or might not be maintenance.

Mr. DEMPSEY. I think under the circumstances we had better give you the \$20,000.

Gen. TAYLOR. Yes, sir; but it should be noted that the \$20,000 is for continued maintenance and improvements.

#### HONOLULU HARBOR, HAWAII.

Mr. DEMPSEY. Very well. The next item is Honolulu Harbor. You seem to have on hand \$7,000 cash and outstanding contracts of \$40,000, approximately, on December 1, and you suggest some further appropriations for improvements. What do you say about making further appropriations for improvements there, General?

Gen. TAYLOR. The recommendation in the report is that \$150,000 be devoted in cash, with \$600,000 additional in continuing contracts authorization. From previous experience we have had at Honolulu I am very well satisfied that the amount necessary to complete that work ought to be provided in one appropriation. These remarks apply equally to Hilo Harbor, which is the next item.

Mr. DEMPSEY. Gen. Taylor, as I understand it, the entrance to the harbor and the main harbor has attained the project depth of 35 feet?

Gen. TAYLOR. Yes; we have.

Mr. DEMPSEY. But the harbor is somewhat restricted in area in proportion to its importance, and it has been deemed very advisable to obtain some additional territory of the project depth?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And the proposed appropriation is for that purpose?  
Gen. TAYLOR. That is correct. That will afford not only a little additional harbor area but will also give room for the development of wharves.

Mr. DEMPSEY. To accommodate the commerce?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. Now, the project to do the work that is now contemplated will cost, as you estimate, something like a quarter of a million dollars?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. What you suggest is that \$150,000 be appropriated and that we provide authorization for the remaining \$600,000, or such part of it as may be necessary, on advertising, be authorized at the same time?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And the difficulty over there, as I understand you, is in obtaining at that point, which is distant from the mainland, competition in bidding, and so obtaining or being sure that you obtain bids that are reasonable?

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. And which result in competition.

Gen. TAYLOR. It is a very expensive undertaking, as you will readily see, to take a dredging plant from the United States to Honolulu, and unless the contractor is offered an inducement of a relatively large job it will necessarily add very greatly to the cost per yard of the work which we can do, for the reason that he must charge up the expense of taking his plant over and probably the expense of bringing his plant back to the United States, whatever the size of the job may be.

Mr. DEMPSEY. In other words, we can add it to the next appropriation of \$150,000 with no authorization, a \$150,000 contract, whereas if there is the authorization we can add it to five times that amount, \$750,000, and it adds simply one-fifth per cubic yard.

Gen. TAYLOR. That is right.

Mr. DEMPSEY. As I understand you, you very strongly recommend the work from every standpoint, but do recommend in case the initial appropriation is made that the authorization for the additional \$600,000, or such part of it as may be necessary, be made at the same time, in order to insure economy.

Gen. TAYLOR. I do, and I will say from the experience we have had in the past that I question very much whether we could advantageously use the \$150,000 if it was appropriated without the contract authorization. What I think would probably happen would be that that money would remain in the Treasury until we have further appropriation.

Mr. SMALL. The distance from San Francisco to Honolulu, as I recall, is a little more than 2,000 miles.

Gen. TAYLOR. It is about 2,000 miles; yes.

#### HILO HARBOR, HAWAII.

Mr. SMALL. General, what about this Hilo Harbor, Hawaii?

Gen. TAYLOR. What I said in reference to Honolulu applies equally to Hilo.

Mr. SMALL. You mean with regard to the authorization?

Gen. TAYLOR. With regard to the authorization; yes, sir.

Mr. DEMPSEY. We will get the map of Hilo and have you explain to us the nature of the work that you propose to do there, so that we will know, and I think that is the only additional thing that we will need as to that harbor. What is the amount, the additional amount of authorization suggested there?

Gen. TAYLOR. \$224,000. That is not quite as important, that authorization, as in the other case, although nearly so. This is breakwater construction work and the stone will probably be obtained in the vicinity anyway; but the cost of installation of the plant and all of that has to be added to any work which is done, and if one part of the work the cost of installation is added to that part of the work; when we do another part it is added again, and if we do it a third time it is added again; so that it is a very great advantage to have the continuing contract authorization. Here is the jetty [referring to map] that it is proposed to complete, out here, to protect the harbor, which lies in here, from the heavy seas.

Mr. DEMPSEY. About how much is involved?

Gen. TAYLOR. The cost is \$370,000.

Mr. DEMPSEY. How far is the jetty to be extended?

Gen. TAYLOR. Twelve hundred and seventy-five feet.

Mr. DEMPSEY. There is only one other question: How long would this continuing contract in each case—that is, over how long a period would the expenditure be stretched; that is, approximately?

Gen. TAYLOR. Well, it would depend entirely upon what—

Mr. DEMPSEY. I know, but I mean approximately.

Gen. TAYLOR. The breakwater work ought to be done, I should say, within a year and a half. The dredging would depend entirely upon how large a plant they put in there, and it would probably take two years at least. There is still another thing to be said about the Honolulu Harbor project. You will notice that between the harbor and the ocean there is something which is shown here as land?

Mr. DEMPSEY. Yes.

Gen. TAYLOR. That has all been filled—this has been filled in from material dredged from the harbor. This originally was just a sand flat. There has been a good deal of question as to the ownership of that, but it has finally been decided that it is in the United States. This land in here [indicating] would be very valuable for military purposes.

Mr. DEMPSEY. I would like to have that put in the record so it will be shown. We will mark on this map the made land on one side of the jetty A.

Gen. TAYLOR. You mean on one side of the harbor entrance?

Mr. DEMPSEY. Yes; marked "A." Then we will mark these other places "B" and "C."

Gen. TAYLOR. Yes.

Mr. DEMPSEY. As I understand you, there would be adjacent to these parcels A, B, and C a considerable area of additional land which would be made by the excavation in the harbor?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. And that additional land, in connection with the land which the Government already owns, would be very valuable for military purposes?

Gen. TAYLOR. Yes.

Mr. DEMPSEY. For what military purposes; how?

Gen. TAYLOR. It might possibly be used for gun emplacements and for training purposes and for other purposes. The total cost which would be involved in filling that land over and above the cheapest method of disposition of the material would be not to exceed \$40,000, but what we would like would be authority, if this contract is made, to expend such money as might be necessary in filling this land; it would be an expenditure which really would not be, strictly speaking, a river and harbor expenditure, because we could otherwise dispose of the material for \$40,000 cheaper, but the land which we would fill would be worth far more than the \$40,000. I would suggest that to the appropriation item be added this proviso:

*Provided*, That the Secretary of War is authorized, at his discretion, to require any portion of the material dredged under the sum thus appropriated to be placed on the adjacent Government reservation with a view to reclamation of the same.

With such a proviso as that, we could use our discretion in filling; if it didn't cost too much we could fill it, and if it did cost too much we would not do it.

#### SAN JUAN HARBOR, PORTO RICO.

Mr. DEMPSEY. We next come to San Juan Harbor, Porto Rico, for which an estimate is made of \$10,000 for maintenance and \$400,000 for further improvements, with \$131,000, approximately, in hand cash, and about \$6,500 on December 1 of outstanding contracts, which, I take it, have probably been used up, that is, the latter part of the item. What do you say about that, Gen. Taylor?

Gen. TAYLOR. That should be given. San Juan Harbor has become a very important harbor. The location and natural advantages make it a natural fine harbor, but the harbor area was very limited. With the increased size of ships and the increased amount of shipping seeking that harbor it is very necessary that the harbor be deepened and enlarged. Congress has authorized that improvement, but it is subject to a proviso that the Government of Porto Rico shall contribute, to reimburse the United States, to the extent of \$1,200,000, payable in certain annual installments, that being about 75 per cent of the total cost of the project.

Mr. DEMPSEY. That condition is found on page 1946 of the river and harbor act of 1915 and provides that until \$600,000 of the amount expended to dredge and reclaim is reimbursed Porto Rico shall each year pay the United States \$50,000.

Gen. TAYLOR. Yes; and then read the rest of the paragraph, Mr. Dempsey. At the time the project was adopted it was estimated that it would cost approximately seven or eight hundred thousand dollars. Six hundred thousand dollars was 70 per cent. Due to the increased cost of the work the cost of the project was very greatly increased, and when the attention of the Porto Rican authorities was called to the increase of the work and to the fact that when the project was adopted it was with the understanding that the United States would be reimbursed to the extent of 70 per cent; that is, reimburse the United States to the extent of 70 per cent of the cost; that is, to the extent of \$1,200,000 in annual installments, I

believe, of \$100,000 instead of \$50,000. In other words, on account of the doubled cost of the project they doubled their contribution. The material which is being excavated in the harbor is being used for filling up the low lands which are owned by the Porto Rican Government, so that as a matter of fact they expect to get all of their money back in the increased value of those lands.

Mr. DEMPSEY. That is, the material is to be dumped on the shoal lands, which will make them valuable lands?

Gen. TAYLOR. Which will make them valuable lands. They expect to get all of their contribution back, and that is the reason they make it extend over a period of years. As they sell the land they will reimburse the United States. We tried several times to put the work out by contract, but we were unable to do so. We finally had opportunity to purchase a dredge, which we purchased and sent down there, and that dredge is now at work in the harbor, and we need the money for which the estimate is submitted to operate that dredge for the next 18 months. It is quite an expensive place to work; because, for instance, we have to get our fuel from St. Thomas. We have a tug down there that we send over to St. Thomas once a week for a supply of fuel, fuel oil.

Mr. DEMPSEY. Here is your situation to-day, as I understand it. That entrance was dredged to 30 feet, the ruling depth now at the entrance is 28 feet; that is, the entrance channel. Now, in the other channel the controlling depth is 29 feet and 350 feet width at its narrowest portion, and you are to attain 500 there, as I understand it.

Gen. TAYLOR. Yes.

Mr. DEMPSEY. The inner harbor was dredged to 30 feet over 82 acres and to 24 feet over 14½ acres, and the shoaling has reduced that to 29 feet over 68½ acres and to 24 feet over 13½ acres. It seems to me that this is entirely a different situation from other appropriations; we are practically reimbursed here; we are really doing this as the agent of Porto Rico in large measure.

Mr. DAVIS. Do they need all of this money right now?

Gen. TAYLOR. Yes; we do.

Mr. SMALL. We are reimbursed to the extent of 50 per cent.

Mr. DEMPSEY. Well, 30 per cent is fairly nominal. I had that figure in mind, but it seems to me that the only question on that is this, Gen. Taylor: These estimates were made at the peak of cost. Can you reduce them to an amount of, say, \$500,000?

Gen. TAYLOR. I should be very much afraid to reduce the estimate for the work for Porto Rico. Conditions are quite different down there than they are in this country. If we should run out of funds and have to suspend work down there we would be very much more embarrassed, for instance, than we would here. I see nothing at all that looks to me that is at all excessive in that estimate, judging by what it has been costing us to carry on the work. We are still dependent upon our oil supply, which we must get from St. Thomas. We have to keep a sea-going tug down there at Porto Rico, which goes back and forth from San Juan and St. Thomas, where we buy our fuel oil; they put it in the tanks and put them on the tug and take them back to San Juan.

That is the order with which we operate the dredge. I doubt very much if there is going to be any great reduction in prices of fuel oil, for instance, in the next year. That is one of our very impor-

tant items. With respect to other expenses there, wages in Porto Rico did not go up to the same extent that they did in the United States and the conditions are such that I doubt very much if they will come down much, if any, in the next year.

Mr. SMALL. I observe that the estimated cost of the dredging is \$25,000 a month.

Gen. TAYLOR. \$25,000 a month.

Mr. SMALL. For a year, of course, that would be \$300,000?

Gen. TAYLOR. Yes.

Mr. SMALL. And for the three months additional it would be \$75,000, virtually making up your estimate of \$400,000.

Gen. TAYLOR. That is what the estimate is made up of; yes.

Mr. DEMPSEY. You have \$250,000 on hand in cash?

Gen. TAYLOR. No.

Mr. DEMPSEY. As of December 1.

Gen. TAYLOR. No. We have \$130,000.

Mr. DEMPSEY. Yes; \$130,000. I beg your pardon. I had the wrong item.

Gen. TAYLOR. That would last us a little over six months. It is stated in the report that it is expected that will be exhausted about April 1. I might say that the Secretary of War, the last time that he was at the Isthmus, came back through San Juan, and he was very much impressed with the necessity for the carrying on of this work down there. The conditions were such that it made a special impression upon him.

Mr. DEMPSEY. What is your average expenditure down there?

Gen. TAYLOR. We haven't had any, Mr. Chairman, because we have only pressed the work within the last year.

Mr. DEMPSEY. What do you say it has been costing you since you have been operating your dredge there?

Gen. TAYLOR. Well, the best thing to go by is from the 1st of July to the 1st of November we spent \$89,000. That is our cash balance unobligated was \$89,000 less and our contract outstanding liabilities was reduced by \$91,000, so that we actually expended, between the 1st of July and the 1st of November, \$180,000. That is five months.

Mr. DEMPSEY. That is four months.

Gen. TAYLOR. Yes. Part of that was in the purchase of equipment which we won't have the next year, you see, so that I can not say from that statement alone just what we did expend, as the work was only commenced this last year and we haven't anything to go on in the way of past experience. The only thing that I have to go on is what I know dredges of that type are costing in this country, and taking into consideration the greater difficulties of doing the work in San Juan, I am satisfied that that estimate of \$400,000 is not an excessive estimate.

Mr. DEMPSEY. Your cheaper labor ought to offset, if not do better than offset, your difficulties.

Gen. TAYLOR. The cheaper common labor, yes; but our other labor, our skilled labor, such as engineers on the plant, and mechanics, and the captain, and other skilled members of the crew, we have to pay them more in San Juan than we do in the United States.

Mr. DEMPSEY. Why is that?



Gen. TAYLOR. Well, they won't go unless we do. It is a long ways away from home.

Mr. DEMPSEY. My judgment is this: That we should appropriate what is really needed here. Now, the simple question is whether they can work economically and continuously during the period that is covered by this bill for less than \$460,000. That is the only question involved in this particular question, and that, Gen. Taylor, we are going to put up to you.

Gen. TAYLOR. I do not think I am safe in reducing the estimate. You can omit the \$10,000 for maintenance; making the item read continuing the improvement and for maintenance.

EXAMINATIONS, SURVEYS, AND CONTINGENCIES, RIVERS AND HARBORS.

Mr. DEMPSEY. Gen. Taylor, the next recommendation is \$500,000 for surveying.

Gen. TAYLOR. Yes, sir.

Mr. DEMPSEY. What is the ordinary appropriation for that?

Gen. TAYLOR. The ordinary appropriation has been from \$300,000 to \$500,000. That appropriation takes care not only of the preliminary examinations and surveys authorized in the bill, but it is also used to pay for these surveys where we didn't have money enough, previous surveys. We have at the present time left from previous appropriations approximately \$140,000. If the committee should not decide to make many surveys, probably half of this amount, \$250,000, would be ample, but we have to pay out of that appropriation for all of our miscellaneous examinations for which no appropriation is specifically available; we have continuous expenses in connection with violations of the laws regarding the preservation of rivers and navigable streams, inspection of bridges, supervision of construction of bridges, permits for fish pounds, and all kinds of little dredging operations, and for all of these expenses we have to make allotments out of this particular item. We also have to pay out of that the expenses of the Board of Engineers for Rivers and Harbors, which includes all of our expenses in connection with hearings, our traveling expenses for members of the board, and our employees which we send out, and we also have to pay out of that item a certain proportion of the expenses of the office of Chief of Engineers. We are authorized by law to expend \$50,400 a year out of this item for clerical help and help of assistant engineers and others in the office of the Chief of Engineers, so that all of these items go on, regardless of the number of surveys that may be authorized. Unless there is an unusual number of surveys \$250,000 may be enough.

Mr. DEMPSEY. I know of my own personal experience that there is going to be a large number of applications for surveys if there is a bill, because gentlemen have applied to me both off and on the committee and it perhaps would not be safe to reduce that.

Gen. TAYLOR. I am satisfied it could not be safely reduced below that, and if we have a large number of surveys we will probably have to ask that it be increased in the Senate.

Mr. DEMPSEY. We can probably find out something about that before the bill is reported and if we find that information is true we can increase the estimate.

Gen. TAYLOR. It also depends a good deal upon the character of the surveys that are authorized. For instance, in the last bill there was one survey which in itself alone would take a considerable slice out of \$150,000. That is the Tennessee River, in Kentucky, Tennessee, and Alabama. In other words, it covers the entire Tennessee River, and it was the intention of the parties who were interested in having that put in that the entire subject should be investigated, which was highly proper—we have gone at it piecemeal heretofore—and we might as well spend \$50,000 on that survey and find out what there is in that river and then say "Here it is, here is the whole proposition," and we will find whether it is or is not worth going ahead with, instead of spending, as we have been doing, large sums on the improvement of the river in certain sections, not knowing what the end of it is going to be.

Mr. DEMPSEY. I quite agree with that.

Gen. TAYLOR. It is a very wise expenditure and we are making a very thorough study of all of the conditions there, physical and everything, which includes the water power. It is our intention to take into consideration all the possibilities of the river regarding water power, navigation, and the whole subject generally, because it is the kind of survey that ought to have been made years ago.

Mr. DEMPSEY. In concluding this hearing, I want, on behalf of the committee and myself personally, to extend to you our very warm thanks for the services which you have rendered the committee. You have been exceedingly helpful in every way and I am sure that we all appreciate it very greatly, General.

Gen. TAYLOR. There is one other matter that has been reported to this committee; and that is the question of the appropriation for covering payments made under authorization of law which authorized us to adjust contracts which were entered into prior to the war and which became inequitable on account of the increased cost of labor and materials during the war. This is the third report which has been made under that authorization and contains recommendations for authorization for payments of a number of items, the total amounting to \$194,742.65.

Mr. DEMPSEY. And you submit that report as a part of your testimony?

Gen. TAYLOR. The report was submitted to Congress by the Secretary of War, addressed to the Speaker of the House, and then the Speaker of the House referred it to this committee, so that it is a part of your records now, and I think should be printed as a part of this testimony.

I understand that the previous report of amounts to be paid contractors on account of the increased cost of labor and material during the war was authorized by section 10 of the act of 1919 and a section of an act of 1918, and have been taken care of by authorizing the Secretary of War to make payments out of the appropriation for the particular works affected; but in this report there is at least one item which is in excess of the amount which is available for the improvement affected, and consequently appropriation should be made for that case in order to enable us to make payments. The matter should be covered by appropriation to the amount recommended in this letter, \$194,742.65.

TUESDAY, JANUARY 18, 1921.

**STATEMENT OF HON. F. F. PATTERSON, Jr., REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY.****APPROPRIATION FOR WOODBURY CREEK.**

Mr. DEMPSEY. Mr. Patterson, we will be glad to hear your statement.

Mr. PATTERSON. I am a new Member from the first district of New Jersey, and I am not very well acquainted with what has been done with regard to New Jersey, and the only request I have had since I have been a Member of Congress has been for the improvement of Woodbury Creek. That is my old swimming hole, and I know something about it. It is rapidly filling up and navigation is almost impossible there. I got a statement from a coal dealer who claims that he is not able to get up to the city of Woodbury with his coal barges. I have received no communications regarding the Salem River or Raccoon Creek or Timber Creek, but I am very much interested in the Camden improvement of the water front there, and I would like to inquire of the committee if they can give me any information as to whether there has been anything done. I understand there is an unexpended appropriation of \$71,000 there.

Mr. DEMPSEY. The tentative disposition of the committee is to grant the \$40,000 for a group of items of which Woodbury Creek is one. The estimates call for \$51,000, but if we grant \$51,000 it will be somewhat in excess of the amount which the committee feels they can grant in view of the state of the Treasury at the present time. It is the disposition of the committee to grant \$40,000 if it can.

Mr. PATTERSON. That is very kind of you, I am sure. I will not take any more of your time. If we get \$40,000, I think that will be satisfactory.

May I inquire about the Delaware River at Camden, for which \$70,000 is still available?

Mr. SMALL. No estimate was submitted for that.

Mr. DEMPSEY. You apparently have abundant there for this year's needs, and you practically have \$71,000.

Mr. PATTERSON. And that will be available?

Mr. DEMPSEY. Yes.

Mr. SMALL. Gen. Taylor recommends that the appropriation for the Delaware River at Camden be consolidated with the Delaware River appropriation proper.

Mr. PATTERSON. Of course, the engineer would know more about that than I would, but I think it should be kept separate. We are doing separate work there and have spent half a million dollars in building a wharf and storehouses at the pierhead line. The city has bonded the taxpayers to that extent, and the wharf will be erected and ready for use in the spring. I think there should be some attention given to that point so that the river will be made available for the commerce, and I think the items should be separate, the item of the Delaware River at Camden should be separate from the Philadelphia items for the Delaware River, if possible.

Mr. SMALL. He believes it is for the best interest of the improvement of the river at Camden to have it incorporated with the others.

Mr. PATTERSON. Of course, the judgment of the committee is much superior to my own, but we ought to have deep water out there so that the commerce of Camden, which is growing larger all the time, can be taken care of. As you know, we have shipyards there, and we have the Victor people and the Campbell Soup people, who use the river quite a good deal, and improvements should be made in order that they may use it.

Mr. SMALL. Gen. Taylor's recommendation was not that any change should be made in the project, but simply that the project should be consolidated with the Delaware River project—general improvement—so that there would only be one appropriation item. That would give you a great advantage in having available, when necessary, the money which is appropriated, or as much as might be necessary for the Delaware River items, which runs up into millions.

Mr. PATTERSON. I have no objection if Camden is taken care of, gentlemen, and I have no doubt that your judgment is better than mine on that.

# INDEX.

## A.

	Page.
Absecon Creek, and Inlet, N. J.....	62
Agate Bay Harbor, Minn.....	304
Alabama River, Ala.....	211
Allegheny River, Pa., open-channel work.....	300
Altamaha, Ocontee, and Ocmulgee Rivers, Ga.....	152
Ambrose Channel, Craven Shoals, and Anchorage Channel.....	35
Anclote River, Fla.....	170
Apalachicola Bay, Fla.....	205
Apalachicola River, Fla.....	206
Appoquinimink River.....	68
Appomattox River, Va.....	81
Arkansas River, Ark. and Okla.....	272
Atchafalaya River, La.....	251

## B.

Baltimore Harbor, Md.....	69
Bayou Grossetete, La.....	250
Bayou Plaquemine, La.....	250
Bayou Teche, La.....	250
Bayou Vermilion and Calcasieu River and Pass, La.....	204
Bay Ridge and Red Hook Channels.....	37
Beaufort Harbor, N. C.....	110
Beaufort Inlet, N. C.....	111
Beaufort, S. C., waterway between, and St. Johns River, Fla.....	151
Beverly Harbor, Mass.....	41
Biloxi Harbor, Wolf and Jordan Rivers, and East Pearl River, Miss.....	220
Birkett, Clarence T., statement of.....	183
Black River, Mich.....	327
Black Rock Channel and Tonawanda Harbor, N. Y.....	333
Black Warrior River, Ala.....	215
Boston Harbor, Mass.....	4
Brazos River, Tex.....	258
Bridgeport Harbor, Conn.....	21
Briggs, Clay Stone, statement of.....	220
Brunswick Harbor, Ga.....	153
Buffalo Harbor, N. Y.....	3, 331
Burlington Harbor, Vt.....	43

## C.

Cabell, J. E., statement of.....	105
Caloosahatche River, Fla.....	168
Calumet Harbor, Ill.....	316
Calumet River, Ill. and Ind.....	318
Cape Cod Canal.....	6
Cape Fear River, N. C.....	111
Cambridge and Crisfield Harbors, etc., Md.; and Broad Creek River, Del.....	73
Charleston, waterway between, and Winyah Bay, S. C.....	121
Charleston Harbor, S. C.....	123
Charlotte Harbor, N. Y.....	334
Chattahoochee River, Ga. and Ala.....	207
Cheboygan Harbor, Mich.....	326
Chicago Harbor, Ill.....	315
Chincoteague Bay, Va., inland waterway from, to Delaware Bay, at or near Leves, Del.....	69
Choctawhatchee River, Fla. and Ala.....	210
Claiborne Harbor, Md.....	74

	Page.
Coal, cost of.....	86
Cold Spring Inlet, N. Y.....	60
Columbia and lower Willamette Rivers below Vancouver, Wash., and Portland, Oreg.....	352
Columbia River and tributaries above Celilo Falls to the mouth of Snake River, Oreg.....	352
Conneaut Harbor, Ohio.....	330
Connecticut River below Hartford, Conn.....	17
Coos Bay, Oreg.....	342
Cooper, Salem, Cohansey, and Maurice Rivers, Woodbury, Mantua, and Racoon Creeks, N. J.....	56
Coosa River between Rome, Ga. and Lock 4, Ala.....	212
Cove Sound, waterway connecting, and Beaufort Harbor, N. C.....	111
Curry, Charles F., statement of.....	286
Cumberland River, Tenn. and Ky., below Nashville.....	287
Above Nashville.....	290

## D.

Delaware Bay, Del., harbor of refuge.....	55
Delaware River, inland waterway from, to Chesapeake Bay, Del. and Md.....	64
Delaware River, N. J., Lalor Street, Trenton, to Upper Railroad Bridge.....	48
Delaware River, Pa., N. J., and Del., Philadelphia, Pa., to the sea.....	50
Detroit River, Mich.....	323
Dredge boats.....	23
Dredges, construction of four seagoing hopper.....	112
Dredging, cost of.....	112
Duluth-Superior Harbor, Minn. and Wis.....	305
Dunkirk Harbor, N. Y.....	91, 330

## E.

East River, N. Y.....	139
East River and Hell Gate, N. Y.....	39, 130
Edge, Walter E., statement of.....	144
Erie Harbor, Pa.....	330
Examinations, surveys, and contingencies.....	367
Expenses for administration, inspection, and contingencies.....	25

## F.

Fairport Harbor, Ohio.....	329
Flint River, Ga.....	207
Flushing Bay, N. Y.....	130
Freeport Harbor, Tex.....	255

## G.

Galveston Channel, Tex.....	221
From Galveston Harbor to Texas City, Tex.....	226
Galveston Harbor, Tex.....	220
Galveston, waterway from, to Corpus Christi.....	251
Government boats, operation of.....	172
Government terminals.....	172
Grand Marais Harbor, Minn.....	303
Grand Marais, harbor of refuge, Michigan.....	306
Grays Harbor.....	356
Great Pedee River, S. C.....	120
Green Bay Harbor, Wis.....	310
Greenwich Harbor, Conn.....	34
Gulfport Harbor and Ship Island Pass, Miss.....	217

## H.

Harbor Beach, harbor of refuge, Michigan.....	326
Hawley, Willis C., statement of.....	345
Hillsboro Bay, Fla.....	185
Hilo Harbor, Hawaii.....	362

	Page.
Honolulu Harbor, Hawaii.....	361
Housatonic River, Conn.....	20
Houston Ship Channel, Tex.....	242
Hudson River Channel, New York Harbor.....	43, 182
Hulbert, Murray, statement of.....	130
Humboldt Harbor and Bay, Calif.....	337
Huron Harbor, Ohio.....	329

## I.

Illinois River, below Copperas Creek.....	320
Indian River, Fla.....	163
Indiana Harbor, Ind.....	319

## J.

Jacksonville, Fla., district.....	165
Jamaica Bay, N. Y.....	59, 132, 141
Johnsons Bayou, La.....	267

## K.

Kenosha Harbor, Wis.....	311
Keweenaw Waterway, Mich.....	307
Keyport Harbor, N. J.....	46
Key West, Fla., harbor at.....	162, 164
Kissimmee River, Fla.....	165

## L.

Labor, cost of.....	88
Lake Pontchartrain, La.....	250
Lake St. Clair, Mich., channels in.....	323
Lake Washington Ship Canal, Wash.....	358
Lorain Harbor, Ohio.....	329
Ludington Harbor, Mich.....	315

## M.

McDuffie, John, statement of.....	170
Manistee Harbor, Mich.....	315
Manteo Bay, N. C.....	107
Menominee Harbor and River, Mich. and Wis.....	310
Merchant vessels, draft of.....	72
Mermentau River to Sabine River section.....	204
Milford Harbor, Conn.....	19
Milwaukee Harbor, Wis.....	312
Mississippi River.....	274
Between Missouri River and Minneapolis, Minn.....	278
Removing snags and wrecks from, below the mouth of the Missouri River.....	276
Southwest Pass and South Pass of.....	186
To Bayou Teche section.....	203
Waterway from, to the Sabine River, La., Franklin to Mermentau section..	197
Missouri River from Kansas City, Mo., to Sioux City, Iowa.....	285
Mobile Bay Channel between and Mississippi Sound, Ala.....	213
Mobile Harbor and Black Warrior River, Ala.....	170, 212
Mokelumne River, Calif.....	341

## N.

Nansemond River, Va.....	83
Nantucket, Mass., harbor of refuge at.....	11
Neuse River, N. C.....	109
Newark Bay, N. J.....	44
New Bedford and Fair Haven Harbors, Mass.....	12
Newburyport Harbor, Mass.....	4
New England, railways and waterways in.....	26
New Haven Harbor, Conn.....	19
Newtown Creek, N. Y.....	42

	Page.
New York Harbor.....	35
Nome Harbor, Alaska.....	359
Norfolk Harbor and Channels, Va.....	77
Norfolk, Va., inland waterway from, to Beaufort Inlet, N. C.....	84
Northeast (Cape Fear) and Black Rivers, N. C.....	118

## O.

Oakes, Col. J. C., statement of.....	86
Oakland Harbor, Calif.....	335
Occoquan Creek, Va.....	76
Ohio River, general open channel works.....	298
Locks and dams, construction of.....	298, 301
Oklawaha River, Fla.....	162
Onancock River, Va.....	84
Ontonagon Harbor, Mich.....	306
Osage River, Mo.....	286
Oswego Harbor, N. Y.....	334
Ouachita and Black Rivers, Ark. and La.....	268
Overstreet, James W., statement of.....	97

## P.

Pagan River, Va.....	83
Pamlico and Tar Rivers, N. C.....	108
Pamunkey River, Va.....	77
Pascagoula Harbor, Miss.....	213
Pass Cavallo, channel from, to Port Lavaca, Tex.....	251
Patterson, F. F., jr., statement of.....	369
Pawcatuck River, R. I. and Conn., maintenance.....	16
Pensacola Harbor, Fla.....	211
Pollock Rip Shoals, Nantucket Sound, Mass.....	6
Port Aransas, Tex.....	258
Port Bolivar, Tex., channel to.....	227
Portland Harbor, Me.....	3
Port Wing Harbor, Wis.....	305
Potomac River at Washington, D. C.....	75
Providence River and Harbor, R. I.....	14
Puget Sound and its tributaries.....	357
Purse, Thomas, statement of.....	100

## Q.

Queenstown Harbor, Md.....	74
----------------------------	----

## R.

Racine Harbor, Wis.....	313
Rappahannock River, Va.....	76
Raritan River—Bay.....	45
Red River from Fulton, Ark., to mouth of Washita River, Okla.....	268
Reed, D. A., statement of.....	91
Rehoboth Bay, inland waterway between, and Delaware Bay, Del.....	68
Richmond Harbor, Calif.....	286, 336
Rouge River, Mich.....	327

## S.

St. Andrews Bay, Fla.....	209
St. Clair River, Mich.....	322
St. Croix River, Wis. and Minn.....	309
St. Johns River, Fla., Jacksonville to the ocean.....	158
Jacksonville to Palatka.....	161
Palatka to Lake Harney.....	161
St. Marys River, Mich.....	321
Sabine-Nechez Canal.....	265
Sabine Pass and Port Arthur Canal, Tex., harbor at.....	262
Sacramento River, Calif.....	341



	Page.
Sandusky Harbor, Ohio.....	328
San Francisco Harbor, Calif.....	335
San Juan Harbor, P. R.....	364
Santee River and Estherville-Minim Creek Canal, S. C.....	120
Sapelo and Darien Harbors, Ga., etc.....	152
Sarasota Bay, Fla.....	169
Savannah Harbor, Ga.....	97, 145
Savannah River below Augusta, Ga.....	92, 150
Shoal Harbor and Compton Creek, N. J.....	46
Shrewsbury River, N. J.....	46
Snake River, Oreg., Wash., and Idaho.....	352
Staten Island, channel between, and Hoffman and Swinburne Islands.....	37
Stamford Harbor, Conn.....	31
Stockton and Mormon Channels and Fremont Channel and McLeod Lake.....	340
Sturgeon Bay and Lake Michigan Ship Canal, Wis.....	311
Suisun Bay Channel, Calif.....	336
Swift Creek, Contentnea Creek, and Trent River.....	110

## T.

Taylor, Brig. Gen. Harry, statement of.....	3, 239, 352
Tennessee River above Chattanooga.....	291
Chattanooga to Riverton.....	292
Below Riverton.....	297
Thimble Shoal Channel, Va.....	80
Toledo Harbor, Cleveland, Ohio.....	327
Tuckerton Creek, N. J.....	62
Tyaskin Creek.....	74

## U.

Upper Chipola River.....	206
--------------------------	-----

## V.

Vinson, Carl, statement of.....	92
Virginia, waterway, on cost of.....	69

## W.

Waccamaw River, S. C.....	119
Wappoo Cut, S. C.....	129
Warrior Harbor and River.....	308
Water hyacinth, removal of.....	205
Waukegan Harbor, Ill.....	312
White Lake Harbor, Mich.....	314
White River, Ark.....	272
Willapa River and Harbor, Wash.....	356
Williamson, W. W., statement of.....	98
Wilmington Harbor, Del.....	63
Woodbridge Creek, N. J.....	44
Woodbury Creek, appropriation for.....	369

## Y.

Yaquina Bay and Harbor, Oreg.....	343
Yazoo River, Miss.....	271

## Z.

Zippell Bay, Lake of the Woods, Minn.....	308
---	-----



